DES 95-47
Vol. 1

DRAFT
GENERAL MANAGEMENT PLAN
ENVIRONMENTAL IMPACT STATEMENT

PECOS

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PECOS NATIONAL HISTORICAL PARK

DRAFT
GENERAL MANAGEMENT PLAN
DEVELOPMENT CONCEPT PLAN
ENVIRONMENTAL IMPACT STATEMENT

PECOS NATIONAL HISTORICAL PARK ▪ SAN MIGUEL AND SANTA FE COUNTIES, NEW MEXICO

This *Draft General Management Plan / Development Concept Plan / Environmental Impact Statement* describes and analyzes alternatives for the management and use of the Pecos and Glorieta units of Pecos National Historical Park. A proposed action and a no-action alternative have been developed for each unit; two additional action alternatives have been developed for the Pecos unit and one additional action alternative for the Glorieta unit. Pecos National Historical Park which was established in 1990, consists of the Pecos and Glorieta units. Under alternative A (no action) for the Pecos unit present use and management would continue; the primary interpretive focus would continue to be at the Pecos Pueblo / mission ruins complex; and no new visitor facilities would be developed. Under alternative B (the proposed action) for the Pecos unit two visitor staging areas would be developed — the Fogelson visitor center area and Kozlowski's Stage Stop; new visitor facilities would include trails, trailheads, and interpretive exhibits. Under alternative C for the Pecos unit three visitor staging areas would be developed — the Fogelson visitor center, Kozlowski's Stage Stop, and the Gateway overlook; staging areas and associated facilities would have easy vehicle access. Under alternative D for the Pecos unit visitors would enter the park from the south, and a new visitor center would be developed at the Gateway overlook area; other visitor facilities would continue to be provided at Kozlowski's Stage Stop and the Fogelson visitor center. Under alternative 1 (no-action) for the Glorieta unit no new facilities would be provided. Alternative 2 (proposed action) for the Glorieta unit would incorporate a staffed visitor contact facility and interpretive trails and exhibits at Pigeon's Ranch and an interpretive exhibit at a pulloff overlooking Cañoncito. Alternative 3 for the Glorieta unit would incorporate the same facilities as alternative 2; however, the staffed contact station would be at a different location. The major impact topics assessed are cultural and natural resources, scenic resources, and the socioeconomic environment, including the local economy and NPS operations. This document was prepared to evaluate and to assess the impacts of a range of alternatives and to provide the public with an opportunity to comment. This document will be on public review for 60 days. Comments on this document should be received no later than November 17, 1995. Comments should be submitted to

Superintendent
Pecos National Historical Park
P.O. Drawer 418
Pecos, NM 87552

For additional information, or to arrange for a tour of the park (through October 15), please contact the park at the above address or by telephone (505) 757-6414.

United States Department of the Interior ▪ National Park Service ▪ Denver Service Center

BORRADOR
PLAN GENERAL DE MANEJO
PLAN DE DESARROLLO DE CONCEPTOS
EVALUACIÓN DEL IMPACTO AMBIENTAL
PARQUE NACIONAL HISTÓRICO DE PECOS

CONDADOS DE SAN MIGUEL Y SANTA FE, NUEVA MÉJICO

Este borrador del Plan General de Manejo, del Plan de Desarrollo de Conceptos y de la Evaluación del Impacto Ambiental describe y analiza alternativas para dos unidades, Pecos y Glorieta, del Parque Nacional Histórico de Pecos. Para cada unidad se presentan una acción o propuesta y alternativas que no requieren ninguna acción. Además se presentan otras alternativas adicionales, dos para la unidad Pecos y una para la unidad Glorieta. Estas alternativas proponen opciones para el futuro manejo y uso del Parque Nacional Histórico de Pecos. Bajo la Alternativa A (ninguna acción) para la unidad Pecos el presente uso y manejo del parque continuaría sin cambio. El foco de interpretación principal seguiría siendo el complejo de ruinas misioneras del pueblo de Pecos, y no se construiría un nuevo centro para visitantes. Bajo la alternativa B (la acción propuesta) para la unidad Pecos se construirían dos estaciones para visitantes—el centro de visitantes Fogelson y el hospedaje (de diligencias) Kozlowski. Nuevas mejoras para el uso de visitantes incluirían senderos y exhibiciones interpretativas. Bajo la alternativa C para la unidad Pecos se construirían tres estaciones para visitantes—el centro Folgelson, el hospedaje Kozlowski, y el mirador Gateway. Estaciones para visitantes y estructuras asociadas con las mismas tendrían fácil acceso automobilístico. Bajo la alternativa D para la unidad de Pecos los visitantes entrarían al parque desde el sur y un nuevo centro de vistantes se construiría en la zona del mirador Gateway. Se continuarían los servicios para visitantes en el hospedaje Kozlowski y en el centro Folgelson. Bajo la alternativa 1 para la unidad de Glorieta (ninguna acción) no se harían nuevas construcciones. En la alternativa 2 (acción propuesta) se edificaría una estación de contacto para visitantes dotada de guardarpaques, senderos interpretativos y exhibiciones en el rancho Pigeon (Paloma), y una exhibición interpretativa al lado del camino con vista a Cañoncito. La alternative 3 para la unidad Glorieta incorporaría las mismas estructuras que la alternativa 2, pero la estación de contacto estaría en un lugar distinto. Los tópicos de mayor impacto en las propuestas y las alternativas incluyen recursos naturales y culturales y el ambiente socioeconómico, como así también la economía local y las operaciones del Servicio de Parques Nacionales. Este documento fue preparado para poder evaluar una gama de alternativas, los impactos de estas alternativas, y para proveer al público la oportunidad de comentar sobre las propuestas. Este documento va a estar bajo examen público por 60 días. La administración del parque agradecería comentarios u observaciones sobre estas alternativas u otras cuestiones que afecten el manejo y la administración del parque durante los próximos 15 años. Comentarios sobre las propuestas y la evaluación ambiental deben recibirse antes de 17 Noviembre de 1995. Los comentarios deben presentarse al

Superintendent
Pecos National Historical Park
P.O. Drawer 418
Pecos, NM 87552

Si necesita información adicional, por favor, póngase en contacto con el parque a la dirección ya indicada o hágalo por teléfono al (505) 757-6414. Si lo desea y si lo solicita, se pueden hacer recorridos del parque o reuniones con el intendente.

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HOW TO USE THIS PLAN . . . . .

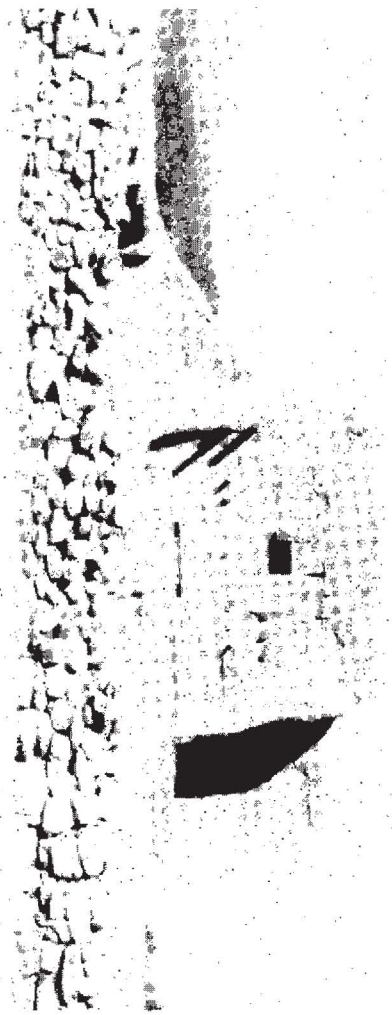
This document is organized in four main sections. The first section, called "Purpose of and Need for the Plan," introduces the plan, describes why it is necessary, and what it will accomplish. This section provides background information about the park, including a brief description of the park, its purpose, and its significant resources. Planning objectives are identified, along with issues and concerns facing the park. This section also summarizes the park's establishing legislation. Finally, this section describes how the plan relates to other planning activities associated with the park and surrounding areas.

The second section, "Alternatives, Including the Proposed Action," presents alternatives for each of the two park units — the Pecos unit and the Glorieta unit — as well as alternatives that were proposed but rejected for various reasons. Certain federal laws and policies dictate the management of the park and its resources, and many resource management actions would be common to all alternatives. The no-action alternative describes what would occur at the park without an approved general management plan. Certain minimal actions would be undertaken to ensure that the park's resources would be adequately protected and that park operations would remain functional. The proposed action presents the National Park Service's preferred actions to best guide future management for each unit. The other alternatives present other feasible options.

The third major section is called the "Affected Environment" and presents a comprehensive description of the park and the surrounding area as a context for analyzing the impacts of the proposed action and alternatives. This section describes cultural, natural, and scenic resources, as well as social and economic factors and visitor use patterns.

The last major section, the "Environmental Consequences" describes in detail the effects each alternative would have on the resources described in the "Affected Environment."

The public review of this document allows individuals, organizations, and agencies who are interested and concerned about the future of this park to consider the benefits and drawbacks of these alternatives and to have an opportunity to express their comments. In evaluating the alternatives, the actions may be considered together or as individual components. In other words, individual actions from various alternatives may be repackaged as a new alternative (for example, some actions from alternative B plus same actions from alternative C or D). All comments and opinions will be considered before concluding the planning process. Comments are strongly encouraged because they assist the National Park Service in making its final decision.



PURPOSE OF AND NEED FOR THE PLAN

PURPOSE AND NEED

The purpose of this *Draft General Management Plan / Development Concept Plan / Environmental Impact Statement* for Pecos National Historical Park is to guide cultural and natural resource management, visitor use, and park administration for the next 15 years. This plan will balance the protection of park resources with the needs of park visitors and park administration in a comprehensive approach.

This plan is needed because the 1975 *Pecos National Monument Master Plan / Environmental Assessment* is obsolete. The 1975 plan provided only management guidance for the original monument area and is insufficient to provide adequate guidance for the newly designated national historical park, which includes 6,305 additional acres. This additional acreage was authorized by Congress in 1990 and includes the Forked Lightning Ranch and the Glorieta battlefield sites. Many new management concerns resulted from the 1990 legislative actions, and without a new General Management Plan, adequate guidance would not be available for making informed management decisions. There might also be conflicts when addressing resource management, visitor services, and park development concerns.

This plan presents proposed actions and several alternatives for each of the two park units — the Pecos unit and the Glorieta unit. The plan also analyzes the consequences of implementing these actions on natural and cultural resources, visitor use, nearby lands, and the socioeconomic environment.

INTRODUCTION . . . . .

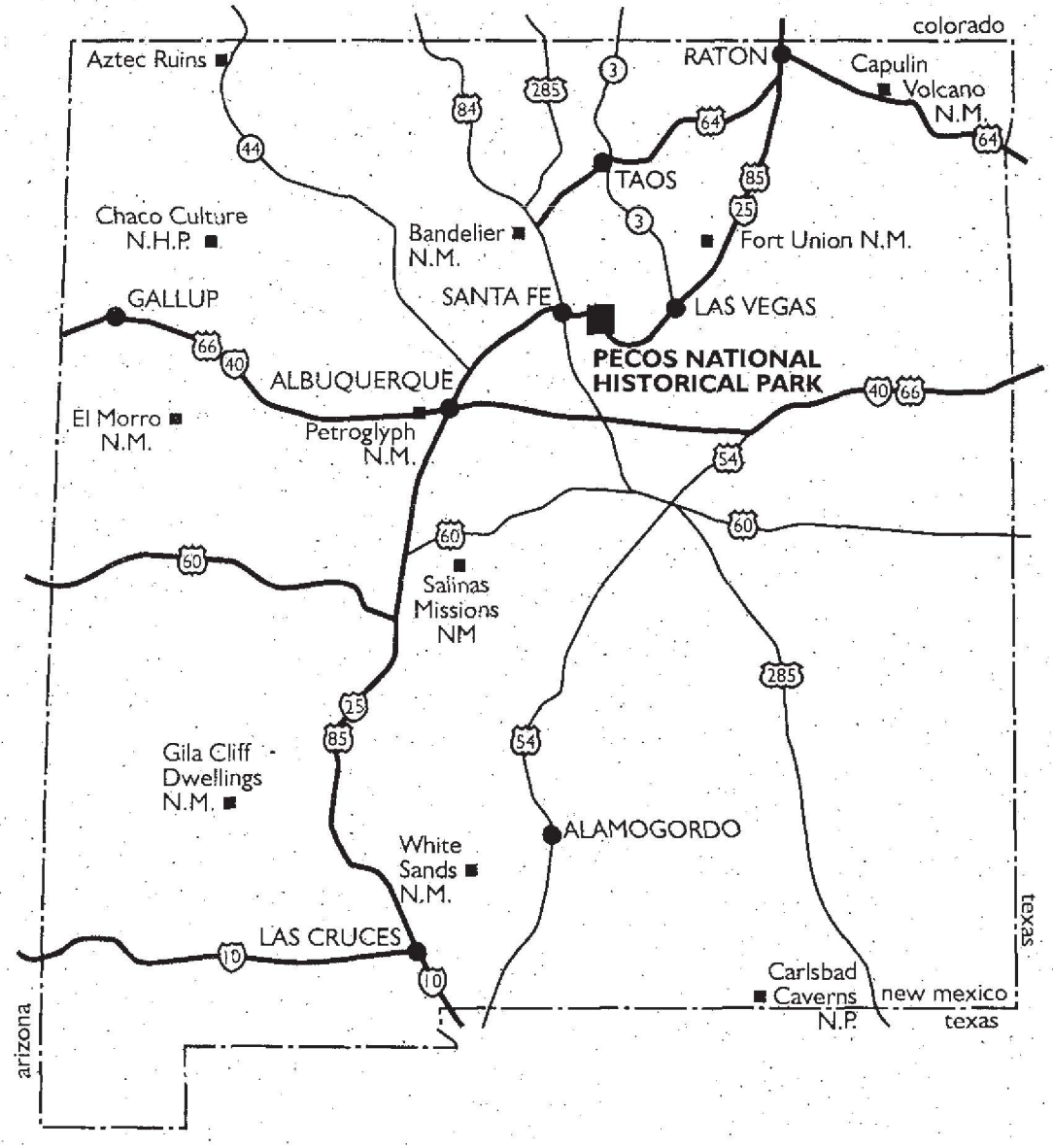
BRIEF DESCRIPTION OF THE PARK

Pecos National Historical Park is 28 miles southeast of Santa Fe, New Mexico (see Region map). Most of the park lies in the upper Pecos River valley. This narrow valley is bordered by the 13,000-foot Sangre de Cristo Mountains to the north, the rugged hills of the Tecolote Range to the east, and the steep Glorieta Mesa to the west. The 8,200-foot Glorieta Mesa escarpment is the most prominent geographic feature in the area, rising abruptly above the 7,000-foot valley floor.

The upper Pecos River basin is part of a broad pass through the Sangre de Cristo Mountains. This passageway skirts the south end of the Tecolote Range and extends up the Pecos valley before traversing the gentle slopes of Glorieta Pass west to the Apache Canyon area and the Rio Grande valley. Glorieta Pass can be seen from the Gateway overlook, which lies in the southern part of the park near the Pecos River.

Historically the Pecos River valley was a diverse area, with successive populations funneling through the valley. The Paleo-Indians, Archaic peoples, Basketmakers, and Puebloan peoples all left evidence of early use and settlement in the valley. At Pecos a fortress-like pueblo was established during the 15th century and became a trading center for the region.

Two generations after Coronado's visit in 1542, the Spanish established a mission at Pecos, and the economic contacts continued. By the late 1700s Hispanic settlers occupied most of the land in the Pecos valley. Inhabitants saw commerce increase again with the development of a trade route from St. Louis to Santa Fe, which became known as the Santa Fe Trail.



REGION

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This route to Santa Fe was also used for military expeditions during the Mexican War and the American Civil War. The two areas now included in the Glorieta unit (Pigeon's Ranch and Cañoncito) were the setting for one of the Civil War's most important southwestern battles — the Battle of Glorieta Pass. With the advent of railroads, the gateway provided a natural passage through the basin. Over time, almost all of the trails, roads, railroads, and highways followed the ancient trade and travel routes from the Great Plains to the Rio Grande valley. Today the park contains outstanding remnants of the area's history set in a 20th century ranch backdrop. Over the years, despite the advent of modern towns and ranches, the scene has remained virtually unchanged.

PARK PURPOSE AND SIGNIFICANCE

The first step in planning for Pecos National Historical Park was to define the park's purpose and significance based on the legislation that established the park. The park's purpose identifies why the area was set aside; the park's significance identifies the importance of the area to our cultural heritage and our natural resources. Park purpose and significance statements are basic to all of our assumptions about the area and the ways it should be used and managed.

Pecos Unit

The purpose of the Pecos unit is to preserve and interpret an exceptional cultural and natural area that has had a long human history.

The significant elements of the Pecos unit are listed below.

- The Pecos area served as a strategic cultural crossroads and frontier for at least 10 centuries.
- There are few modern intrusions visible from the park, so visitors can still experience a view similar to what people of prehistoric times saw.
- The Pecos area contains a variety of cultural resources that represent the cultural heritage of the Southwest from 4500 B.C. to the present.
- Pecos Pueblo was occupied from prehistoric times to the 19th century and is an excellent example of a place still valued and used by descendants of the people who lived there.
- Landmark excavations at Pecos provided a basis for modern southwestern archeology.
- The Pecos River is one of the longest free-flowing rivers in New Mexico. The river in the park has scenic values and undisturbed areas inhabited by a large variety of plants and animals.

Glorieta Unit

The purpose of the Glorieta unit is to preserve and interpret areas where the Civil War Battle of Glorieta Pass took place.

The Battle of Glorieta Pass is significant because it effectively ended the Confederate attempt to conquer the West. The Pigeon's Ranch and Cañoncito areas contain natural landmarks and historic resources associated with the battle.

PRIMARY PARK RESOURCES

In the process of developing alternative concepts and direction for managing the park, primary park resources were identified. The following primary cultural and natural resources represent

- major archeological or important historical resources that relate to the purpose and significance of the park
- heritage of ethnographic values
- outstanding examples of natural or scenic values

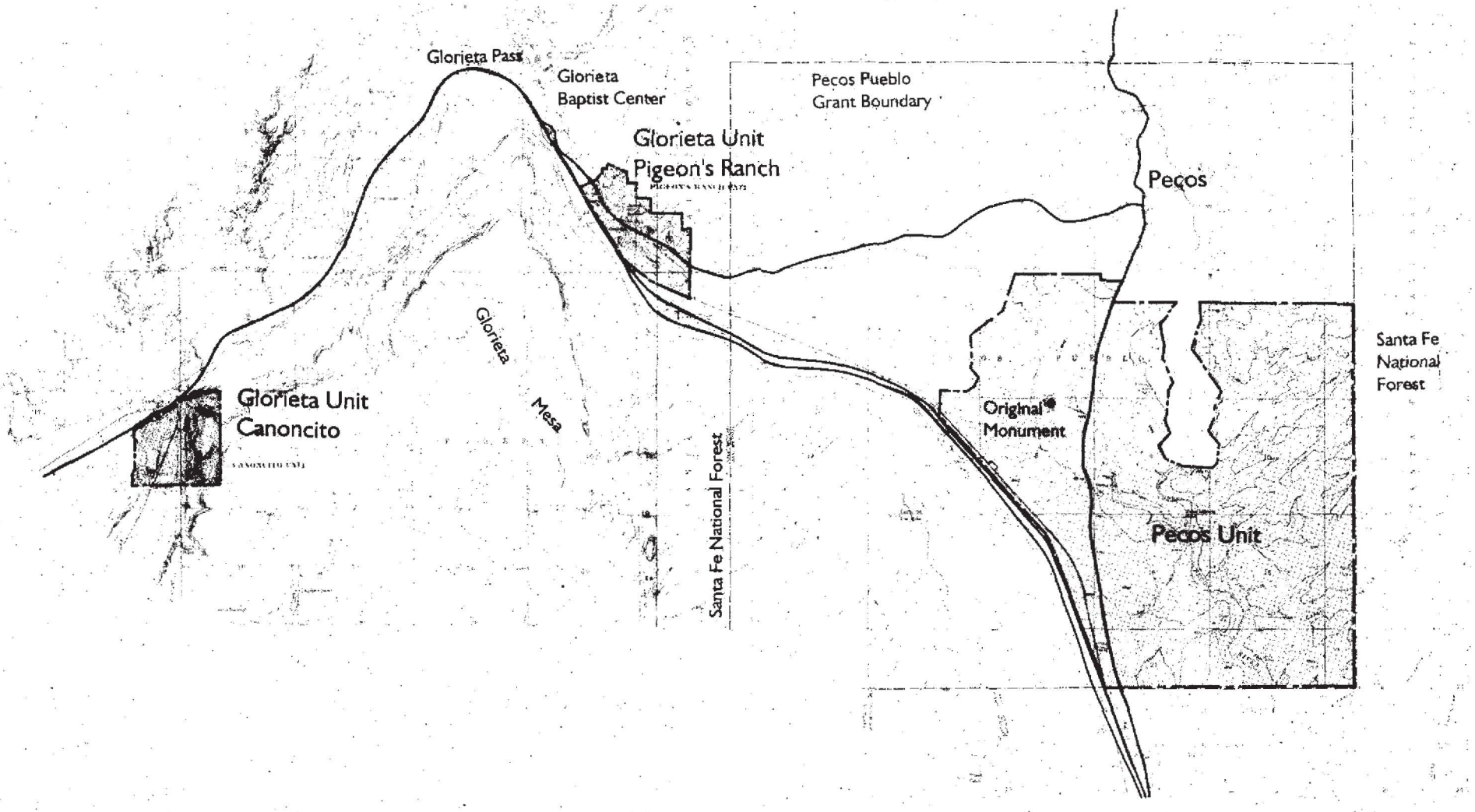
A brief description of the primary park resources is provided below (see Existing Conditions map). A more thorough description of these resources is included in the "Affected Environment" section.

Glorieta Pass (Gateway Views and Connections)

Glorieta Pass is a traditional link through the Sangre de Cristo Mountains between the Rio Grande valley and the Great Plains. For centuries Indians, Spanish explorers, early settlers and traders, and Civil War soldiers have followed this common corridor; railroads and modern highways take present-day travelers along the same route. While the pass itself is not in the park, it can be seen from various vantage points, which provide an important historical context and connection. Glorieta Pass has a distinctive outline when looking northwest from the Gateway overlook.

Gateway Overlook

The location of the Gateway overlook is a former quarry site and is significantly disturbed. However, this site overlooks the Pecos River and offers spectacular views to Glorieta Pass. From this vantage point a visitor can take in many of the primary resources of the park, including the Pecos Pueblo / missions ruins complex and ranch house. La Placita, a Hispanic frontier settlement, can also be seen from this site.



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Not to Scale

EXISTING CONDITIONS

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Pueblo Sites

The Pecos Pueblo was one of the largest protohistoric and historic communities in the Southwest because it centralized populations and interrelated sociopolitical and trade systems in one major regional center. As a trading power Pecos Pueblo was instrumental in developing and increasing Plains Pueblo trade systems between the early 1400s through the late 1700s. Pecos has a direct association with almost every significant phase of Spanish history in New Mexico — exploration, missionization, colonization, Pueblo revolt and reconquest, and Colonial resettlement.

The park contains extraordinary archeological remains. Most notable is North Pueblo, which is built on a small mesa (mesilla) above Glorieta Creek. When the Spaniards first encountered Pecos in 1541, the pueblo had 2,000 inhabitants living in a huge rectangular block of more than 600 rooms, reaching four to five stories. Also on the mesilla is South Pueblo, a linear block of rooms that was once two to three stories high. Today visitors can walk through the remains of North and South Pueblos, as well as a boundary wall and restored kivas. The ruins trail, which accesses the Pecos Pueblo / mission ruins complex, is the most frequently visited feature in the park. Many other Pueblo sites preserved in the park are important for their archeological and ethnographic value; dates range from A.D. 1100 to A.D. 1350. These sites are not open to the public.

Spanish Colonial Sites

The mission ruins are made up of an extensive complex of structures and archeological remains dating from the 1500s through the late–1700s. Three churches and two conventos were built on the site of the partially standing 18th century church and convento ruins. The massive adobe walls of the mission of Nuestra Señora de Los Ángeles de Porciúncula near the Pecos Pueblo are still prominent today. This church, built in 1717 by the Franciscan missionaries after the Pueblo revolt, was the third at this site. Associated with the missions was a convento, whose foundation walls have also been excavated and stabilized for exhibit. The earlier two churches have been partially excavated.

Hispanic Sites

The remains of several small Hispanic ranches exist along the Pecos River. The most notable of these, La Placita, is an early 19th century Hispanic frontier settlement, possibly the only one of its kind preserved by the National Park Service. The ruins of the late 19th/early 20th century grist mill and an apple orchard are on the Pecos River near the ranch house. The mill was likely started by Hispanic residents who milled flour for the Pecos valley. The mill's last owner was an anglo named Cattenach.

Santa Fe Trail / Kozlowski's Stage Stop

Several visible Santa Fe Trail ruts are found in the park. Associated with the trail is a way station and hostel established by Martin Kozlowski in 1858. These early facilities offered travelers food, shelter, and stables and corrals for horses and livestock. While the structures have been extensively modified, remnants of the original stage stop are encompassed in the existing buildings, which still represent an important feature of the Santa Fe Trail era.

Forked Lightning Ranch

In the 1920s Tex Austin, a producer of exhibition rodeos, established the Forked Lightning Ranch as a dude and cattle ranch. The ranch encompassed 5,500 acres along the Pecos River. Austin built a noteworthy ranch house, designed by John Gaw Meem, an architect renowned for creating the Pueblo Revival style of architecture associated with the Southwest. The ranch operated for only seven years and was eventually sold to Texas oilman E. E. Fogelson and his wife, movie actress Greer Garson. The Fogelsons owned the ranch until it was sold to the R. K. Mellon Foundation, which donated it to the National Park Service in 1993.

Glorieta Battlefield

The Battle of Glorieta Pass was a significant strategic victory by the Union forces over the Confederates during the Civil War, preventing Confederate troops from advancing further west. The battle took place in March 1862 at various locations near Glorieta Pass. Some of the heaviest fighting of the battle took place near Pigeon's Ranch. The ranch, similar to Kozlowski's, was a trading post and hostel/saloon. The adobe structure seen today near New Mexico Highway (NM) 50 was the main hostel and saloon facility. During the war it served as a Union and a Confederate hospital. Cañoncito served as the staging area and supply camp for Confederate troops.

Pecos River

The Pecos River is one of only five year-round, free-flowing rivers in New Mexico and is one of the longest in the state. The Pecos begins in the Sangre de Cristo Mountains and flows approximately 926 miles before it joins the Rio Grande in Texas. The Pecos River sustains valuable riparian corridors that support important wildlife habitat and ecosystems. This prominent natural feature is also a vital part of the cultural landscape.

PLANNING OBJECTIVES

In the process of developing alternative concepts and direction for the management of the park, the following planning objectives were identified. These objectives are based on the direction provided in the park's authorizing legislation.

Recognize the multi-theme history and multicultural diversity of Pecos National Historical Park

Recognize the gateway role of Pecos

Preserve and protect significant cultural resources

Preserve and protect significant natural resources

Interpret resources for public understanding and appreciation

Determine the number of visitors and types of uses the park could accommodate

Identify development needs and facilities

Encourage cooperation with the local community, traditionally associated groups, and other organizations

PECOS LEGISLATIVE HISTORY AND LEGAL REQUIREMENTS

Pecos National Monument

Congress established Pecos National Monument on June 28, 1965, to

> set apart and preserve for the benefit and enjoyment of the American people a site of exceptional historic and archeological importance . . . including the remains and artifacts of the seventeenth century Spanish mission and ancient Indian pueblo (PL 89–54, June 28, 1965; 79 Stat. 195)

Furthermore, the legislation directed the secretary of the interior to administer, protect, and develop the national monument in accordance with the provisions of the National Park Service organic act.

Pecos National Historical Park

On June 27, 1990, Congress repealed the act to establish Pecos National Monument and authorized the establishment of Pecos National Historical Park to include the former Pecos National Monument and 5,500 acres of the Forked Lightning Ranch. This new park was established to

> recognize the multitheme history, including the cultural interaction among diverse groups of people of the Pecos area and its "gateway" role between the Great Plains and Rio Grande valley
>
> provide for the preservation and interpretation of the cultural and natural resources of the Forked Lightning Ranch (PL 101-313, June 27, 1990; 104 Stat. 279)

On November 8, 1990, Congress expanded the park to include the 682-acre Glorieta unit. This unit was added to

> preserve and interpret the Battle of Glorieta Pass and to enhance visitor understanding of the Civil War and the Far West (PL 101-536, November 8, 1990; 104 Stat. 2368)

The enabling legislation for Pecos National Historical Park stipulated the preparation of a general management plan for the park that would include but not be limited to

> a general visitor use and interpretive program that fully considers the prehistoric and historic aspects of the national historical park, including the gateway theme and early Spanish settlement of New Mexico
>
> a statement of the number of visitors and types of public uses in the park that could be reasonably accommodated in accordance with the protection of park resources
>
> a general development plan for the park, including estimated costs thereof

NATIONAL PARK SERVICE ORGANIC ACT

On August 25, 1916, Congress created the National Park Service in the Department of the Interior to

> *promote and regulate the use of the federal areas known as national parks, monuments, and reservations . . . by such means and measures as conform to the fundamental purpose of said parks, monuments, and reservations, which purpose is to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such a manner and by such means as will leave them unimpaired for the enjoyment of future generations (16 U.S.C. 1 et seq.)*

PLANNING ISSUES AND CONCERNS . . . . .

ISSUES CONSIDERED IN THE DRAFT PLAN

Incomplete Archeological Data

Unknown or unevaluated resources cannot be managed effectively. Past archeological investigations have focused on the larger sites such as the Pecos Pueblo / mission ruins complex. Most of the archeological work was done before modern technology was available, and information is often limited. Smaller, less visible sites have not had the same level of attention or recording as larger sites, and surveys of recently added lands are incomplete. This draft plan recommends strategies and studies needed to deal with this issue.

National Register Records

Although the entire park is listed on the National Register of Historic Places, nomination forms include only the core area of the former monument and the Glorieta unit. Evaluations of the significance and integrity of additional cultural resources, including the cultural landscape, ranch structures, Civil War battle sites, and other archeological sites are needed to determine contributing and noncontributing structures and features. This draft plan makes recommendations regarding national register forms and the process to determine the integrity and eligibility of sites and features critical to protecting these cultural resources.

Collections

The park has an extensive collection of cultural and natural resources but lacks appropriate storage facilities to safely care for and store these resources. As a result, some of the collections are stored in various other locations, and these artifacts and archival materials do not receive consistent treatment, and studies are often insufficient. This draft plan explores ways to improve the storage of cultural and natural resources in the park, enhance the preservation of these resources, and improve research opportunities.

Protection of Cultural Resources

Strategies are needed to protect archeological resources from looting and vandalism, particularly in unsurveyed areas or locations vulnerable to damage (near roads and trails). The proximity of NM 50 and unstructured visitor use are adversely impacting the Pigeon's Ranch building and its setting. Preserving features of the cultural landscape while providing for the development of visitor facilities is needed to maintain the overall integrity of the landscape. Ways to protect these resources are explored in this draft plan.

The Pecos ruins continue to deteriorate because of both natural and human erosive forces. Often past stabilization treatment and repairs were not well documented, and inappropriate preservation techniques obscured the form and outline of the existing sites and structures. Less emphasis was placed on preserving elements of individual walls and features or on sampling archeological materials. Past priorities focused on the amount of visitation, interpretation available, or immediate repair needs instead of long-term management. This draft plan addresses preservation priorities and the comprehensive management of cultural resources.

Traditional Use Areas

Through consultation with Indian tribes who have long-standing ties to the park, some areas have been identified as significant to them. These tribes have expressed concerns that visitor activities and development in these areas would adversely affect their values. The draft plan addresses their concerns.

Hispanic groups also have a long-standing tradition of use in the area. Their concerns are also addressed in this draft plan.

Riparian Areas

The riparian areas along the Pecos River and Glorieta Creek are integral to the overall health of the Pecos River valley: These areas provide important habitat for wildlife in the park and are a significant part of the cultural landscape. The riparian area is particularly sensitive to heavy use by park visitors, who trample vegetation and compact soils. This prohibits the soils from supporting plant growth and absorbing water. Water absorption capacity is needed to moderate

the negative impacts of flooding. The local public and visitors have expressed strong desires to access these areas in the park for fishing and other recreational activities. This plan evaluates the impacts of visitor use in these areas and includes provisions for protecting these resources from degradation.

Threatened, Endangered, or Sensitive Species

The park contains suitable habitat for the southwestern willow flycatcher *(Empidonax traillii extremus)*. This species has been listed as a federally endangered species with critical habitat. Potential critical habitat for the southwestern willow flycatcher exists in the park. A decision about official designation of critical habitat is scheduled for July 1995. In 1992 a pair of the flycatchers was observed nesting 3 miles north of the park. Visitor use in the riparian areas in the park may adversely impact the ability of these birds to nest and reproduce.

Dwarf milkweed *(Asclepias uncialis)* has been found in the park. This is a category 2 species, meaning it is being considered for listing as federally threatened or endangered but there is not enough information available to justify listing. This species is also on the state's list of sensitive plants. Visitor use and development could adversely impact this species.

Potential habitat has also been identified for several other species that are listed by the state or federal government or that are candidate species being evaluated for listing. Visitor use and development in these areas may adversely impact these species.

Exotic (Nonnative) Species

There are several exotic species present in the park, including rainbow trout, brown trout, feral dogs and cats, European clovers and grasses, Russian thistle, Siberian elm, and salt cedar. Kochia or Mexican fireweed is growing on the ruins, and an old apple orchard is present near the Pecos River.

Some of these exotic species, like the apple orchard near the ranch house, are significant to the cultural landscape and may have few or no impacts on native species; however, others may be extremely disruptive to native species and habitats or to historic resources, as in the case of the kochia damaging the ruins.

Scenic Resources

The contemporary scene surrounding Pecos National Historical Park still retains scenic elements that were present at the time of the ancestral Pueblo Indian and Spanish occupation, and some elements reflect later Hispanic and Anglo ranching periods. Changing land uses outside the park are affecting the scene. The high cost of living in Santa Fe is

causing more and more people to live in nearby areas like the village of Pecos. Interstate 25 is capable of handling increased commuter traffic, making it less than a 30-minute commute for most people. Pecos National Historical Park was partially set aside because of its scenic resources. These resources could be impacted by developments outside park boundaries because nearby structures could be seen from inside the park.

Additionally, several existing NPS facilities intrude on the Pecos Pueblo / mission ruins complex scene. These include the ruins stabilization area, the existing picnic area, a parking area for visitors with disabilities, and park administration buildings — all located at the top of the access road near the complex.

Conflicts between Cultural and Natural Resource Management

Many of the park's resources can be categorized as both cultural and natural resources. For example, the ranch pastures require management considerations as a cultural resource of the historic ranch and as a natural resource with vegetation management needs. Balancing the dual nature of many of the significant resources in the park is a concern for park operations. Often there are conflicting values when balancing these dual needs, creating difficult management decisions. This plan addresses the mechanisms needed to resolve these conflicting management decisions.

Visitor Experience and Education

Since the park has been expanded to include the Forked Lightning Ranch and Civil War battlefield sites, in addition to the Pecos Pueblo / mission ruins complex, there are new opportunities for visitors. These opportunities can be expected to extend the current length of stay for visitors at Pecos National Historical Park.

Existing facilities, programs, and staffing are inadequate to provide visitor services for the larger park. New park resources are not interpreted by existing programs and exhibits, and the existing Fogelson visitor center is not large enough to accommodate an expanded educational program and to provide orientation.

In the Pigeon's Ranch subunit the proximity of NM 50 to the historic stage stop and the amount of noise from traffic creates difficulty in trying to provide a quality visitor experience.

Circulation and Access

Since the park has expanded to include additional lands, new visitor circulation and access should be addressed to provide visitors access to these new resources. All park units are currently accessible by existing state highways — the Cañoncito and Pigeon's Ranch subunits by I-25 and NM 50, respectively, and the Pecos unit by NM 50 and NM 63 off of I-25. The state highways now run through the middle of park lands, effectively dividing them. Steadily increasing

through-traffic and related road improvements made by the state will impact visitor circulation and experience. Access to lands on the east side of the Pecos River is currently limited because no bridges cross the river in the park.

At Pigeon's Ranch the highway runs immediately next to the historic stage stop structure and other site resources. The narrow road corridor leaves very little space to develop visitor access or facilities. The proximity to the high-speed road creates a hazardous situation for park visitors. The state is currently exploring the potential for a new interchange with I-25. The interchange would divert traffic from NM 50 in the Glorieta unit and would be closed to through-traffic. There is no federally owned land at Cañoncito to provide visitor access.

Access to the ranch house is a problem for both park staff and large delivery trucks. The existing one-lane bridge across Glorieta Creek is unsafe for vehicles traveling in two directions and has a life expectancy of only a few more years. The roads traveling through the ranch do not meet any public road standards. Parking at the visitor center is congested because it does not adequately accommodate parking needs on high visitation days, nor does it provide spaces for buses and other large vehicles. The current size of the parking area will not accommodate the anticipated increased visitation or longer stays. Additionally, there is no separate staff parking area. Staff parking issues will persist if staff is increased and parking facilities are not expanded.

Visitor Service Facilities

Even at current program and visitation levels, some problems with existing trails, buildings, and other facilities exist. Most of these problems are related to providing opportunities for visitors to comprehend park resources and the resulting quality of visitor experiences.

Visitors do not receive enough of an initial orientation about what the park has to offer and how to experience park resources. New visitors arrive at the parking area, enter the visitor center, and are faced with extensive exhibits that tell an in-depth chronological story, but do not provide an overview. Park staff have observed that many visitors only stop at the visitor center and do not even visit the mission ruins. Lack of awareness of what the park has to offer may be the reason for this. This draft plan addresses the need for a good introductory orientation, which will be even more critical when the other areas of the park are opened to the general public.

The exhibits in the visitor center are fixed and do not allow for rotation, nor is there adequate space to design for this function. The park has many archeological and historical collections that have not been shared with the public due to the lack of adequate exhibit space.

The current missions trail route is unclear, and the end of it lacks a sense of closure for park visitors. There is one trail to lead visitors to and from the Pecos Pueblo / mission ruins complex. Often visitors prefer not to retrace their steps to return to the visitor center and choose to walk back on the park administrative road, which is narrow and unsafe for pedestrians.

Recreational Use

Fishing in the Pecos River appeals to visitors and many local area residents. Other groups expressed interest in horse use on park trails and camping facilities inside the park boundary. The Park Service is concerned about resource impacts associated with the above activities and whether these activities are in accordance with the purpose and significance of the park as identified in the legislation. This draft plan develops a framework for the future evaluation of these potential activities to identify appropriate limitations and restrictions for protecting park resources.

Water Quality

Results from water quality tests in the Pecos River in 1992 and 1993 indicated that there are elevated levels of heavy metals and PCBs in fish that inhabit the Pecos River. This is potentially a health concern for both humans and animals.

Management and Administration Space

Office space that is adequate for current staff levels will not be adequate for anticipated staffing levels identified in the most recent proposed park organizational chart. Preliminary investigations demonstrate that the ranch house and other structures on NPS lands do not meet space and other requirements, such as accessibility for accommodating all administrative functions.

The visitor center currently lacks office space for park staff to conduct administrative duties. The building also has inadequate storage space for books and equipment.

Staffing

Due to the addition of 6,305 acres of the Fogelson Ranch and the Glorieta Civil War battlefield sites, the need to protect cultural and natural resources from human and natural processes has increased. Additional staff is required to ensure the adequate protection and maintenance of these resources, including those in isolated areas of the park.

The existing interpretive staff is also not large enough to provide a quality visitor experience and handle the additional interpretive program requirements. Additional staff is required to provide quality service to the visiting public.

Park Housing

Two staff members are required to live onsite to provide resource protection. Currently staff is being housed in temporary accommodations that do not meet NPS standards. Existing structures will be further evaluated for use as permanent housing.

Adjacent Land Uses

The Pecos unit is bounded on the east by the Santa Fe National Forest, which is managed by the Forest Service. Forest Service management in general is consistent with Park Service management. However, some activities are not allowed in the park, such as producing forage and firewood, and providing for dispersed recreation, which consists of firewood and piñon nut gathering, hunting, and recreational driving. Therefore, boundary identification measures such as fencing and providing signs need to be evaluated and considered.

Both Glorieta Creek and the Pecos River are affected by the septic systems of private development upstream of the park, and there is no way of knowing how extensive the effects may be.

Both the Pigeon's Ranch subunit and Cañoncito subunit are surrounded by private land and some Santa Fe National Forest land. Residential development continues to increase outside the boundaries, and there are some agricultural uses nearby. NM 50 runs through the Pigeon's Ranch subunit and has a major negative effect on its natural and cultural values and resources. I-25 also affects the Cañoncito subunit with visual and noise intrusions and air pollution.

Fee Collection

Fee collection is an NPS mandate. Currently fees are collected at the Fogelson visitor center. Opening new park areas to visitors requires fee collecting operations to be reevaluated.

ISSUES CONSIDERED BUT BEYOND THE SCOPE OF THE DRAFT PLAN

NM 50 links the village of Pecos with I-25 at an interchange near the town of Glorieta. There is currently construction occurring to widen and improve NM 50. A portion of NM 50 bisects the Pigeon's Ranch section of the Glorieta unit. Widening the highway through the Pigeon's Ranch section is discussed in this document and the impacts are analyzed. However, the New Mexico Highway Department and the Federal Highway Administration are preparing an environmental impact statement that analyzes alternatives, which include removing highway 50 through this area and rerouting it. Although the National Park Service supports alternatives that would remove NM 50 from the Pigeon's Ranch area, this document does not analyze the impacts of all the alternative locations for NM 50. The National Park

Service is a cooperating agency in the environmental impact statement being prepared by the Federal Highway Administration.

A long-range goal for the National Park Service would be to reroute NM 63 around the park and retain the existing road as a park road. Removing NM 63 would allow visitors to enjoy a leisurely sightseeing experience, remove high-speed vehicles, and allow for better protection of adjacent park resources. This issue was determined to be far enough into the future and require analysis and resources beyond which could be reasonably obtained for the life of this plan. It is not discussed further in this document.

RELATIONSHIP OF THE PLAN TO OTHER PLANS AND PROJECTS . . . . .

RESOURCE MANAGEMENT PLAN

The Park Service is developing a resource management plan for Pecos National Historical Park that would address both natural and cultural resources. The plan would identify park problems and needs and would recommend further studies required to address them. Research needs and baseline studies would also be integrated into this comprehensive resource management plan.

SANTA FE NATIONAL HISTORIC TRAIL COMPREHENSIVE MANAGEMENT AND USE PLAN

Santa Fe National Historic Trail was established in 1987. A *Comprehensive Management and Use Plan* for the trail was completed in 1990, which seeks to balance resource preservation and visitor use along the trail. The National Park Service administers the trail but has to rely on the cooperative efforts and support of state, local, and private interests, as well as other federal land-managing agencies, to ensure the protection of trail-related resources, to provide outdoor recreational opportunities, and to accomplish the objectives of the interpretive program. At one time remnants of Santa Fe Trail ruts in Pecos National Monument were difficult to reach and were not available to the public. With the addition of the Forked Lightning Ranch and the Glorieta unit and the establishment of Pecos National Historical Park, additional significant Santa Fe Trail features are potentially available to the public. This draft plan explores ways to provide access to and interpret these features.

NEW SANTA FE TRAIL FEASIBILITY STUDY AND CONCEPT PLAN

In January 1992 a *Feasibility Study and Concept Plan* was completed by the Conservation Fund to explore development of a new Santa Fe Trail. The trail, a program integrated with the Santa Fe National Historic Trail, is intended to be a linear recreational greenway connecting the city plaza at Santa Fe with Pecos National Historical Park. Part of the proposal suggests routes between the Cañoncito and Pigeon's Ranch sections of the Glorieta unit and the Pecos unit of Pecos National Historical Park.

If the New Santa Fe Trail proposal was implemented, the park would work with trail organizers to identify specific sites for trailheads and other facilities to link the trail with park features and visitor developments. The park would also coordinate in partnership with trail organizers to develop pedestrian trails within the park boundaries to connect these facilities. If horse use was allowed as part of the New Santa Fe Trail, the horses would need to be left at staging areas outside the park boundary while visitors are in the park.

INTERPRETIVE PROSPECTUS

This draft plan addresses the overall goals and primary themes of the park education program. However, there are more detailed issues related to specific media requirements, programming strategies, and thematic outlines that must be addressed. A detailed education plan (or interpretive prospectus) will be prepared.

LAND PROTECTION PLAN

Approved in 1993, the *Pecos National Historical Park Land Protection Plan* describes land protection strategies for the Glorieta unit. The Pecos unit was not covered because there are no nonfederal lands in the unit. The plan recommends fee acquisition for all lands within the boundaries of the Glorieta unit.

WATER RESOURCES SCOPING REPORT

The National Park Service's Water Resources Division is presently developing a water resources scoping report for Pecos National Historical Park, which should be completed in 1995. This report will identify water-related issues, summarize existing hydrologic information, and establish management objectives for water resources and water-dependent environments.

SANTA FE NATIONAL FOREST PLAN

The area of the Santa Fe National Forest bordering Pecos National Historical Park is managed for habitat protection, habitat improvement, and forage and firewood production. Recreation opportunities consist of firewood and piñon nut gathering, hunting, and recreational driving. This draft plan considers the opportunities and constraints of these nearby uses on the park boundary.

INTERIM OPERATIONS PLAN

The *Interim Operations Plan* was approved in 1992 to provide the new park with management direction until a general management plan could be prepared. The plan called for adding staff to maintain and manage the new park, adapting the ranch house for office space, prohibiting public access to the ranch except special guided tours by reservation, and continuing the existing programs at the former monument. The *Interim Operations Plan* will be superseded by the general management plan when it is completed and approved.

NEW MEXICO HIGHWAY 63

NM 63 is a long-standing link between the communities of Rowe and Pecos. With the addition of the Forked Lightning Ranch to the former monument, the highway now bisects the park. The New Mexico Highway Department has plans underway to improve the safety of this highway, which includes straightening some sections, relocating a bridge over Glorieta Creek, and elevating portions of the roadbed near Kozlowski's Stage Stop and at the entrance to the visitor center area. The state of New Mexico has prepared an environmental assessment for this work in cooperation with the National Park Service to avoid adversely affecting park resources. Portions of the impact analysis from the state's environmental assessment are included in this draft plan.

NEW MEXICO HIGHWAY 50

NM 50 links the village of Pecos with I-25 at an interchange near the town of Glorieta. A portion of the highway bisects the Pigeon's Ranch section of the Glorieta unit. Construction is currently underway to widen and improve NM 50. Due to the sensitive resources in the Pigeon's Ranch area, the New Mexico Highway Department is studying alternatives for removing NM 50 from this area and locating a new interchange southeast of the park boundary. The National Park Service would support any alternatives that relocate NM 50 from the Pigeon's Ranch area.

ALTERNATIVES, INCLUDING THE PROPOSED ACTION

ACTIONS COMMON TO ALL ALTERNATIVES . .

CULTURAL RESOURCES

The goal of cultural resource management is to develop long-term monitoring programs for significant cultural sites, landscapes, and structures, including archeological and ethnographic sites and cultural resource collections. The plan identifies cultural resource concerns and steps needed to address these concerns. Natural resource considerations would also be taken into account when evaluating cultural resource concerns.

Unknown resources cannot be protected or managed effectively. The park's database would be periodically evaluated and updated, information voids would be identified, and positive steps would be taken to ensure development of accurate, up-to-date information on cultural resources.

Information from past and ongoing inventories would be synthesized and evaluated in accordance with the National Historic Preservation Act of 1966, as amended (PL 89-665), National Register of Historic Places criteria, and *NPS-28: Cultural Resource Management Guideline*. Evaluation would be based on historic contexts as identified in the NPS document *History and Prehistory in the National Park System and National Historic Landmarks Program*. Surveys and studies, relevant state plans, and unique park themes could also provide a basis for identifying historic themes. The cultural landscape of the area would be managed as necessary for interpretation and resource protection.

Cultural and natural resource plans (archeological treatment plans and fire, fuel, pest, and exotic species management plans) would be integrated to eliminate conflicts among management actions and to preserve resources.

The condition and integrity of the park's cultural resources would be reevaluated periodically so priorities for their protection and preservation might be established. The park's resource management plan would include action programs to ensure monitoring, preservation, and appropriate use of the area's resources.

The park staff would systematically document original construction methodology and materials, design, and technology involved in past repairs and stabilization at the ruins. This information would be used to develop management strategies and techniques for future preservation and stabilization projects. Such stabilization programs would also include sampling for archeological research, including soils, microfloral materials and pollens, dendrochronology, and carbon 14.

Determinations of eligibility for the National Register of Historic Places would be sought for all historic properties, including cultural landscapes, archeological resources, and other cultural resources. National register forms for Pecos National Monument and individual properties would be revised and resubmitted to reflect these determinations.

Archeological sites are vulnerable to unauthorized collecting, vandalism, and trampling, as well as to insects, erosion, and plant growth. The park's cultural resources would be managed to prevent their inadvertent destruction from natural or human-induced causes. Resources vulnerable to natural processes, looting, vandalism, and visitor use would be identified. Appropriate protective management programs, including restricting the type and extent of use, patrols, and public education, would be instituted. Also, close coordination with natural resource management programs would be necessary to control plants and animals that damage sites.

Razing structures or constructing new facilities might compromise historic properties and destroy site features and context. During planning and before the final design of new facilities, including the expansion of parking, roads, trails, and accessible facilities, appropriate archeological investigations would be conducted, and designs would consider results so significant resources could be avoided during construction. Where sites could not be avoided, strategies to mitigate impacts on sites and features would be developed and implemented. These strategies would also examine treatments for sites that could be impacted by later visitor use. Treatment plans would be developed for the La Placita and mill sites and other archeological sites as needed. Recommendations in the treatment plans would help guide site stabilization, interpretation, protection, and preservation.

Landscape modifications would follow recommendations in an approved cultural landscape report. Certain actions proposed in this plan are based primarily on a preliminary cultural landscape overview (NPS 1995). These interim strategies might need to be revised once the cultural landscape report has been completed. Because the park's cultural landscapes are viewed as a historical continuum from prehistoric times to 1993, the preservation of the form, materials, and features of these landscapes as they have evolved over time would be a high priority. This approach would acknowledge growth and change while allowing for rehabilitation and compatible additions for contemporary and future use. Some treatment of this landscape might be needed in selected areas to remove more recent, incompatible developments and to reintroduce historical elements. Generally, to preserve landscape elements that define the character of Pecos National Historical Park and give evidence of significant historic periods, these elements would be changed as little as possible. To ensure that new developments would not intrude on the landscape and would be compatible with previous development clusters (e.g., Kozlowski's and the ranch house complex), the structural forms,

textures, colors, and materials used in construction (including structures, trails, and roads) would be characteristic of but not identical to existing developments.

Appropriate and sustainable facilities would be developed for curation and storage of the park's extensive collections. Collection management plans and other related programs would be developed and/or updated to ensure collections would be treated in accordance with NPS *Management Policies* and the *Museum Handbook*.

Research that emphasizes the preservation and interpretation of cultural features would be encouraged. Wherever possible, nonintrusive archeological techniques would be used. Research would be conducted in consultation with concerned traditionally associated groups to ensure that important ethnographic resources would not be affected.

In compliance with section 110 of the National Historic Preservation Act, the Park Service would provide adaptive and compatible uses for historic structures where possible. Minimal altering of historic structures and the surrounding cultural landscape would take place. No irreversible changes to historic structures would be made that would impair their integrity until the structures and nearby landscape features had been fully documented and their integrity and significance for the national register assessed. No potentially historic property would be inalterably changed without consultation with the state historic preservation office and the Advisory Council on Historic Preservation. Treatments and actions would be consistent with the *Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation*, NPS *Management Policies*, and NPS-28.

The design of new facilities, including trails, structures, and roads, would be compatible with the park's cultural landscape. Additions to or adaptive use of historic structures and the visitor center would also follow the guidelines mentioned above, and NPS staff would ensure that developments were compatible with the landscape.

The existing cultural resource management facility would be relocated out of view from the Pecos Pueblo / mission ruins complex.

Various laws, rules, regulations, and guidelines for the National Park Service deal with the concerns of traditionally associated groups. The American Indian Religious Freedom Act (PL 95-341) provides for the preservation of Indian rights to practice their traditional beliefs. The National Environmental Policy Act provides for consultation with Indian groups in planning and management activities that affect them. The Park Service would develop and accomplish its programs in a way that would respect the traditions and other cultural values of Indian groups who have ancestral ties to the park.

To ensure that proposed plans would not affect areas of spiritual significance in any of the above areas, the Park Service would consult with concerned cultural groups with long-standing ties to this area. This consultation would occur during the drafting of this plan, before the implementation of specific development or interpretive proposals, or if sensitive resources were inadvertently discovered. Consultation would be needed to determine what treatments traditionally associated communities consider appropriate. Consultation would also be needed for traditionally associated communities to clarify access to park lands for traditional uses.

NPS training programs would cover the etiquette to be followed when park staff encounter religious activities or sites and offerings. Consultation with traditionally associated groups would be expected to be mutually beneficial to the groups and to the park and would continue in the future, helping improve understanding and achieve common goals. Consultation would be especially critical to reach mutually acceptable solutions to questions regarding archeological excavations, resource preservation, and visitor use in sensitive areas. All possible measures would be taken to reasonably resolve differences to ensure that park plans and actions respected the cultural and ethnographic context of sites.

The discovery of significant archeological resources would be followed by protective measures. NPS actions would be guided by provisions of the Native American Graves Protection and Repatriation Act. NPS management at Pecos National Historical Park would establish a prompt and effective notification system to contact and consult with concerned groups. The Park Service would also comply with the discovery provisions of the Advisory Council on Historic Preservation's regulations (36 CFR 800.11) if national register eligible properties were discovered during the implementation of the plan.

Other ethnographic groups, such as those in the broader Hispanic community, also claim historic ties to land in the park. Through consultation with these groups, the Park Service would work out mutually satisfactory provisions for continued traditional uses.

The 1992 amendments to the National Historic Preservation Act outline provisions for protecting confidential information about cultural resources. These amendments provide that information about archeological or ethnographic resources may not be made public if this might risk harm to the resources.

NATURAL RESOURCES

The long-term goals of natural resource management are to maintain healthy native plant communities and animal populations in coordination with cultural management and visitor protection.

NPS *Management Policies* serve as the basis for determining where management actions are required and how they are to be carried out. The park's natural resources would be managed in accordance with NPS policies and regulations. The objectives of natural resource management under the alternatives would be to

- maintain the park's natural ecosystems as much as possible
- establish programs to monitor the condition of natural resources
- promote and conduct scientific study of natural resources
- minimize impacts of human use
- integrate with cultural resource management
- develop a resource database capability that can be used to analyze and correlate park data

Many of the vegetation communities in the Forked Lightning Ranch and the original monument have been altered by human actions. NPS *Management Policies* direct that native vegetation be allowed to naturally restore itself as long as it does not impact cultural resources, including the cultural landscape. This means that most existing pastures and open areas would return to piñon/juniper forest. In some areas, however, open pastures would be maintained. Specifically, under all alternatives vegetation would continue to be cleared near administrative facilities, the Pecos Pueblo / mission ruins complex, the Santa Fe Trail ruts, the field east of the ruins and north of the visitor center that was used by Plains Indians, the formerly cultivated area near the apple orchard, and along boundary fence lines. These areas would be cleared by hand or by mowing; cattle grazing would not be permitted. The apple orchard by the Pecos River would be maintained if it was determined to be a significant element of the cultural landscape.

The Pecos River within the park would be managed in accordance with established wild and scenic river management guidelines. While the stretch of river within the park boundaries does not qualify on its own as a designated wild and scenic river, the guiding management principles would be adhered to. The National Park Service would be an active, supportive partner in any effort to designate or cooperatively manage longer sections of the Pecos River inside and outside the park as a national wild and scenic river.

The management goal for both the Pecos River and Glorieta Creek is to maintain a relatively natural riparian zone. The Park Service would pay special attention to the Pecos River and Glorieta Creek riparian areas. These areas support the most diverse vegetation and animal populations in the park and are more susceptible to human disturbance. Visitor use would be monitored, and appropriate management actions would be taken to ensure that disturbances (e.g., trampling vegetation, streambank erosion, littering) would be minimized. Several actions would need to be taken to rehabilitate the Glorieta Creek riparian zone near Kozlowski's Stage Stop and to restore it to natural conditions. The National Park Service would work with owners of nearby properties to address the issue of nutrient loading.

There are several areas along Glorieta Creek, primarily southwest of the pueblo ruins, where erosion along arroyos is threatening cultural resources. The National Park Service would investigate the severity of the problem and identify erosion control measures, such as revegetation, soil bioengineering, or stabilization of the cultural resource sites.

Exotic plant species are widespread in portions of the original monument and the ranch. In particular, the majority of the Pecos Pueblo ruins are covered by kochia. Besides aesthetic concerns, this plant's roots are damaging the ruins. NPS policy is to manage exotic plant species whenever they threaten park resources and when control is prudent and feasible. Under all alternatives the Park Service would set a high priority for eradicating kochia on the ruins and would work with researchers to identify and test effective control methods in accordance with NPS integrated pest management policies. The removal of all other exotic plants would be coordinated with cultural resource staff to ensure evaluation of impacts on the cultural landscape.

In general the Park Service would maintain native animal populations in the park and minimize human impacts on the populations. Natural processes would be relied on to control the animal populations to the greatest extent possible. Animal populations or individuals would be controlled when they presented a direct threat to visitor safety and health and when necessary to protect cultural resources or landscaped areas.

The water resources scoping report underway for Pecos National Historical Park has identified water-related issues, summarized existing hydrologic information, and established management objectives for water resources and water-dependent environments. All studies identified in that report would be carried out.

To address concerns regarding water quality in the Pecos River, additional studies are being conducted to determine the nature, extent, and source of water pollutants. The Park Service would work with the New Mexico Environment Department, the New Mexico Department of Game and Fish, the U.S. Environmental Protection Agency, the U.S. Forest Service, the U.S. Fish and Wildlife Service, the village of Pecos, and nearby landowners to collect this data and control any water pollution problems. This interagency cooperation would specifically evaluate and address problems at the Terrero Mine and the El Molino sites, which may be impacting the water quality of the Pecos River.

VISITOR USE

The park would be managed for day use, and no camping would be allowed in the park; however, camping facilities are available nearby. The Park Service would encourage private entities to develop additional facilities outside the park as the need arose. Selected special events, such as the Feast Day Mass, cultural demonstrations, and other relevant activities, would continue at the discretion of the park superintendent.

Fishing would be allowed by permit only and would be strictly managed to preserve and protect this sensitive riparian habitat, cultural resources, and public health. Management strategies might include restricting certain equipment and fishing methods and implementing catch limits.

Interpretive Themes and Visitor Experience

There are many stories and educational themes that visitors could learn about while visiting the park. Visitor use, facilities, and programs would be developed to present this information under all the alternatives with the exception of the no-action alternative. Visitors would have opportunities to

- learn about the natural gateway and how it influenced the human and natural history of the valley
- learn about the ebb and flow and the interaction of various cultural groups who came to Pecos
- learn that landscapes are the sum of human and natural actions over time
- learn about the nature and importance of Southwest river systems and threats to them
- learn about historic preservation and cultural resource management
- learn about the role Pecos Pueblo played in the history and development of southwestern archeology
- learn about the Civil War Battle of Glorieta Pass and how it relates to the story of the Civil War in the region and in the country
- learn about natural landforms and how they influenced the outcome of the Battle of Glorieta Pass
- learn about the role and mission of the National Park Service at Pecos

- leave the park with a sense of the value, significance, fragility, and nonrenewable nature of the cultural resources of the Pecos area
- leave the park with a greater understanding and appreciation of other cultures

In order to meet the objectives, the park interpretive program would interpret the following primary themes and related subthemes:

Geologic events resulted in a natural gateway that drew people for thousands of years.

The Pecos River valley was a major focus of travel, trade, and cultural interchange.

- Interaction between Spanish explorers and colonizers and the people of the long-established Pecos Pueblo alternated between coexistence and confrontation.
- The gateway drew Plains people to trade and raid at Pecos from prehistoric times to the 18th century.
- As Pecos Pueblo's strength began to decline, and in response to increasing population pressure and the need for more land, Hispanic ranchers and farmers began to settle farther up the Pecos River valley.
- The Santa Fe Trail followed ancient trading routes and brought a new culture to the Pecos River valley.

The development of the railroad brought new tools, a new economy, and tourism to the Pecos River valley.

Land use and settlement patterns in the Pecos River valley area reflect the different social, civic, religious, and economic needs of the different peoples who have lived in the valley.

Pecos Pueblo is still alive — the place and the people have simply parted company. The land and its sites have special meaning to descendants of Pecos' former residents, who still return to use the area.

Surface water is rare in the Southwest, which limits the occurrence and abundance of many plants and animals.

People are drawn to water and have changed the natural streamside environments to satisfy their cultural needs.

The park played a significant role in the development of American archeology in the Southwest.

- A.V. Kidder shaped the modern science of southwestern archeology by developing and implementing systematic techniques of excavation.

The Battle of Glorieta Pass played a significant role in ending Confederate plans to control the West.

The geography of Glorieta Pass and the Pecos River valley influenced the outcome of the Battle of Glorieta Pass.

A variety of interpretive media would be incorporated to convey these themes. A separate interpretive prospectus would be developed to further guide themes and media. In general programs and media would be presented in English and Spanish, with selected exhibits geared toward children and special groups, such as the hearing and visually impaired.

Visitor Carrying Capacity

Although most of Pecos National Historical Park does not receive a high level of use, with the opening of the ranch and Glorieta unit to the public and the development of visitor programs, use is expected to increase. As visitation increases in the park, the potential also increases for visitors to intentionally and unintentionally harm both cultural and natural resources and to alter the experiences the park offers. It is important to address the concept of carrying capacity in planning park infrastructure and visitor management programs. In addition, both the General Authorities Act of 1978 (PL 95-625) and the NPS *Management Policies* require that general management plans address the issue of visitor carrying capacity.

The Park Service is currently developing a process for addressing carrying capacity based on the Forest Service's limits of acceptable change system, the National Parks and Conservation Association's visitor impact management framework, and the NPS *Management Policies*. Under the process the Park Service is developing, carrying capacity is defined as the type and level of visitor use that can be accommodated while sustaining the desired resource and social conditions that complement the purposes of the park units and their management objectives.

Carrying capacity would be integrated into visitor use planning and management through a series of steps. Briefly, the management zones would be the basis for desired resource and social conditions for different areas of the park. Management strategies would be devised to achieve the desired conditions. Key impact indicators would then be identified for each zone, which could determine if desired conditions were being met. Next, existing conditions would be analyzed with respect to desired conditions, and probable causes of discrepancies would be identified. Based on this analysis, management strategies would be refined. A program of continuous monitoring and evaluation would then be implemented to ensure that desired conditions continued.

Implementing a carrying capacity methodology is several years away. However, this draft plan provides a basis for beginning to address the park's carrying capacity. The plan identifies general management goals, management zones, and management strategies. When the Park Service completes its development of the proposed carrying capacity process, monitoring and evaluation procedures would be integrated into park administration.

In the interim park staff would monitor park resources and visitor use and decide if carrying capacity, as presently understood, was being exceeded in any zone. The existing level and types of visitor use and facility development are not believed to have resulted in unacceptable impacts on the desired visitor experience or on the original monument's natural and cultural resources. However, should carrying capacity be exceeded, the Park Service would take actions, such as restricting visitor use or removing facilities, to restore conditions to acceptable levels.

PARK OPERATIONS AND GENERAL DEVELOPMENT

Facility Design

The natural beauty and cultural significance of the park would be complemented by the built environment (roads, trails, and other facilities) to direct visitors' attention toward park resources. Design consistency and visual quality would communicate a sense of place, including a reflection of existing historic structures and natural landscape patterns. All new facilities would have a common theme that would be repeated in all developed areas to link the overall visual image of the park.

Facility development would incorporate sustainable design principles, including using locally available labor skills and materials where possible, timers and sensors for lighting, high-efficiency insulation, passive solar heating and maximum use of sunlight, and fresh air ventilation.

Accessibility

Provisions would be made to accommodate the needs of special populations who visit the park. Special populations include those with sight, hearing, and mobility impairments, as well as the elderly, children, and visitors who do not speak English.

Visitor facilities and park administrative areas would be designed or rehabilitated for appropriate access to comply with the Architectural Barriers Act and the Americans with Disabilities Act of 1990. Sufficient access to visitor facilities would be provided to ensure that visitors with disabilities have an equal opportunity for safe and meaningful visits to the park.

Historic structures would require special treatment, and any proposals for modifications would be done by a qualified historical architect and would meet the *Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation*.

Adjacent Land Uses and Protection of Park Resources and Viewsheds

The National Park Service would continue to work cooperatively with park neighbors to protect park values. The Park Service would maintain fence lines along the park boundary and would provide appropriate signs to minimize inappropriate uses in the park. Limited administrative horse use would be employed to protect park resources in remote areas in the park. Existing stable facilities for administrative operations at Kozlowski's Stage Stop would be upgraded.

Fee Collection

Fees would continue to be collected from park visitors at the visitor center and visitor contact facilities. As visitation increased, other means of fee collection would be considered, such as an honor system based on pipe-safes at vehicle entry points. A fee collection system based on entrance stations was once considered but rejected because the levels of visitation and quantity of fees would not warrant the cost of staffing this type of facility.

Ranch Roads

Existing ranch roads would be evaluated for continued use and maintenance. As much as feasible, existing ranch roads would be incorporated into proposed trails and administrative access to minimize adverse impacts on undisturbed soils and vegetation from new construction. Roads would be evaluated considering cultural and natural resource factors when deciding to maintain any ranch road for continued use and maintenance.

Land Acquisition

A considerable percentage of land in the Glorieta unit is nonfederal land. To adequately protect resources and for visitors to fully appreciate the Battle of Glorieta Pass, nonfederal lands in the boundary would be acquired in fee simple. Purchase with appropriated or donated funds would probably be the most common method of land acquisition, although land donations, exchange, reserved use and occupancy, and condemnation (which would be unlikely and would be used only as a last resort). More detailed information is contained in the 1993 *Land Protection Plan*, which will continue to serve as a guide for acquisition of private land remaining in the Glorieta unit. Copies of this document are available from the park on request.

ACTIONS CONSIDERED BUT REJECTED

A variety of recreational activities were considered for the park such as camping, swimming, boating, and horseback riding. These activities were evaluated for their appropriateness toward achieving the primary goals of preserving and interpreting the exceptional cultural and natural area at Pecos National Historical Park. While these uses might allow visitors to enjoy park resources, they would also stress the park resources and the ability for park managers to protect the park. Park planners and managers must balance visitor enjoyment and park protection in a manner that is beneficial to all. Therefore these activities were not incorporated in any of the alternatives.

MANAGEMENT ZONING . . . . .

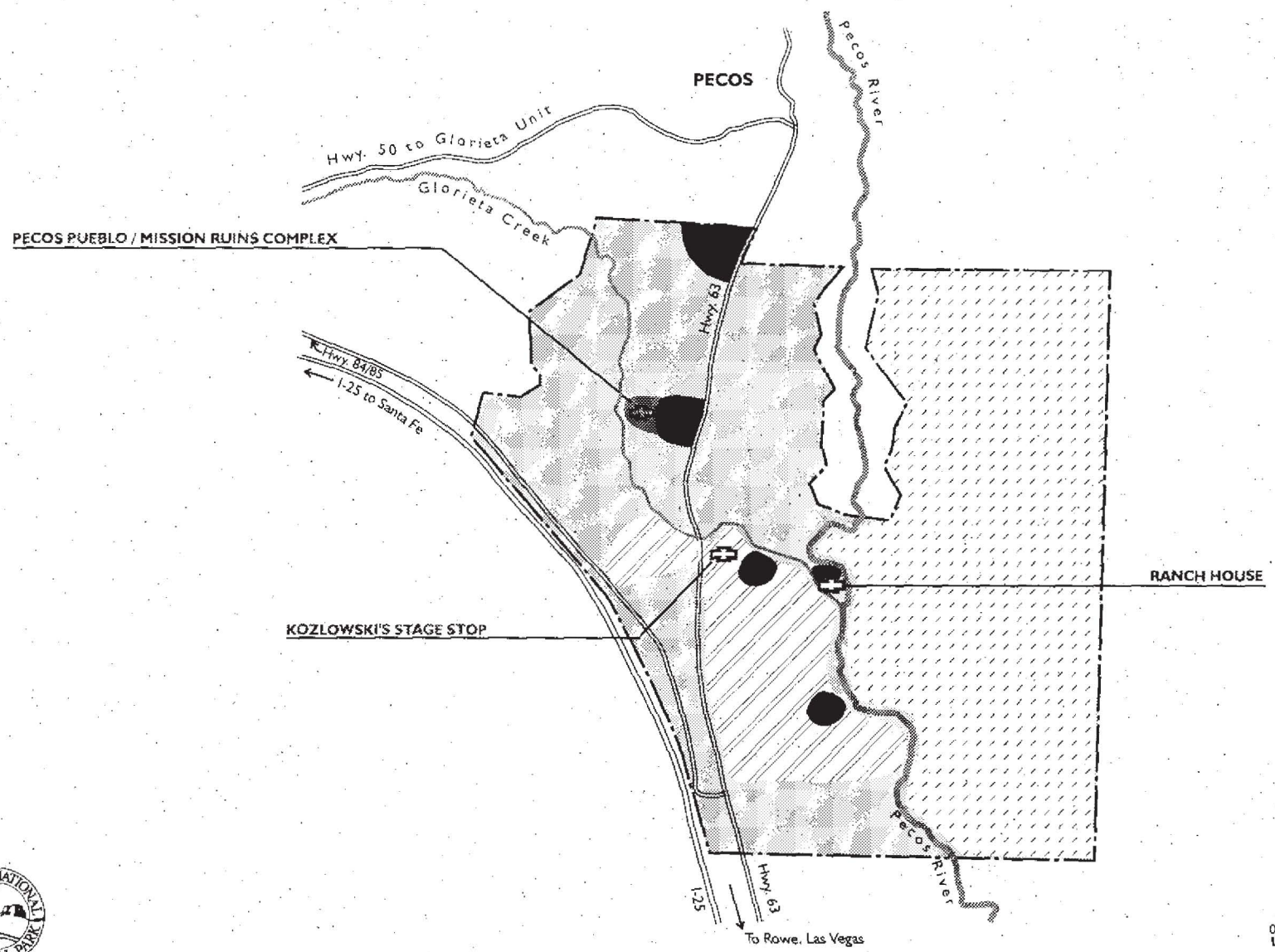
The 1988 NPS *Management Policies* state that general management plans are to prescribe a system of management zones to designate where various strategies will be implemented to achieve the purposes of the park. Management zones indicate how resources, visitors, and development are to be managed in different parts of the park.

Pecos National Historical Park would be divided into six management zones: developed, Pecos Pueblo / mission ruins, rural, cultural/natural, backcountry, and river/stream (see Management Zoning maps). While the management zone designations would be the same for each alternative, the locations of certain zones would differ between the alternatives. The proposed management zones in this document would not restrict or regulate private lands in any way.

The following is a description of each management zone, including considerations for cultural and natural resource management. Throughout the park cultural and natural resource management would be integrated to coordinate decision-making and resolve conflicting needs. In this manner, specific considerations would be addressed in the context of overall resource management.

DEVELOPMENT ZONE

The development zone would accommodate all major visitor and park administrative facilities. Development such as buildings, roads, and parking would be prominent in this zone, and the natural environment would be viewed as a backdrop to these facilities. Although development could cause major alterations to natural resources and possibly impact cultural resources, sensitive planning and design would be employed to preserve cultural resources and perpetuate natural processes.



Pecos Unit

MANAGEMENT ZONE

PECOS NATIONAL HISTORICAL PARK

Santa Fe and San Miguel County ◆ New Mexico

U.S. Department of the Interior / National Park Service
DSC / JUL 95 / 430 / 20028A

- Development Zone
- Rural Zone
- Backcountry Zone
- Cultural / Natural Zone
- Pecos Pueblo / Mission Ruins Zone
- River / Stream Resource Zone
- Park Feature
- Park Boundary

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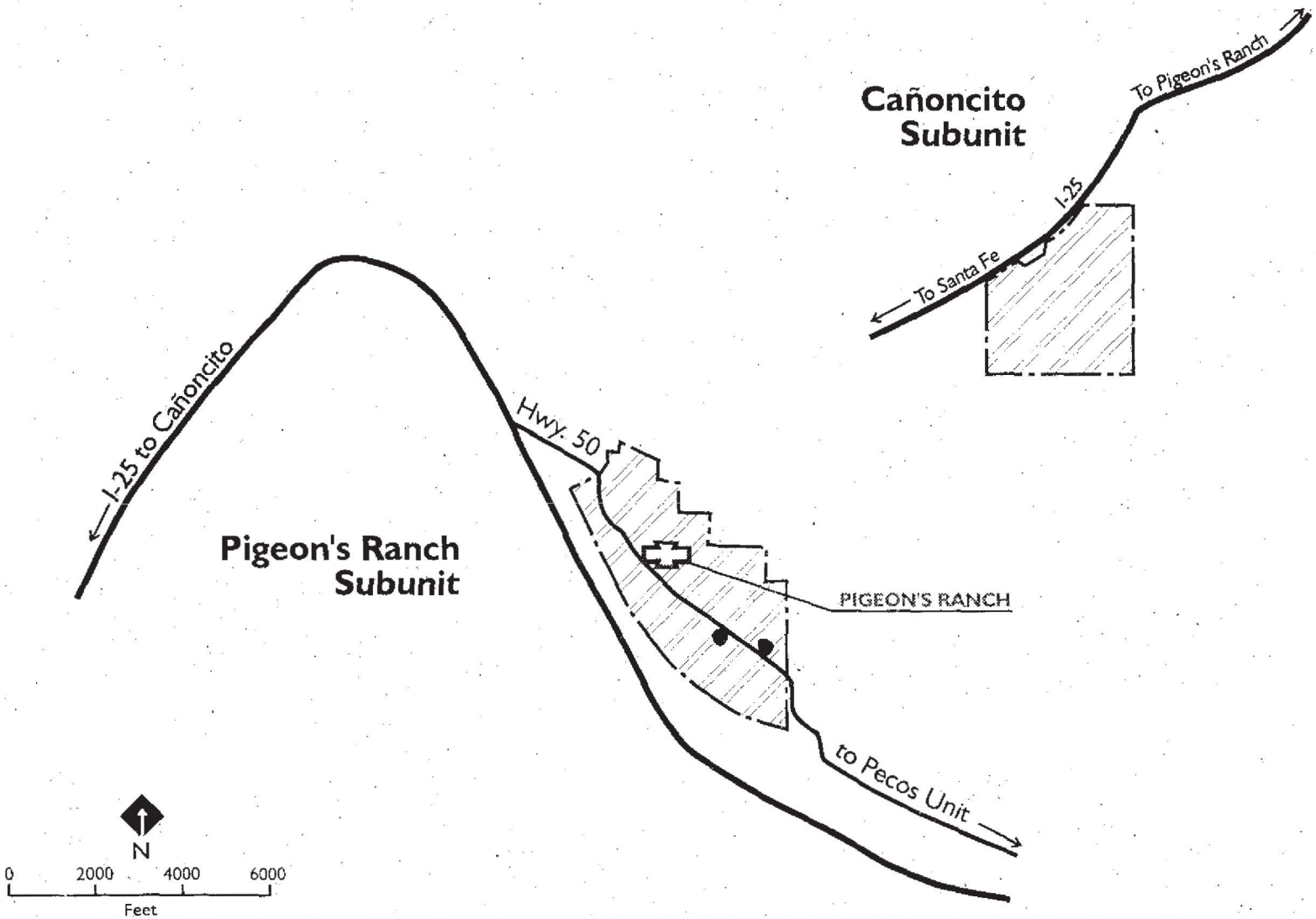


Rural Zone

Development Zone

Park Feature

Boundary

Glorieta Unit

MANAGEMENT ZONE

PECOS NATIONAL HISTORICAL PARK

Santa Fe and San Miguel County ♦ New Mexico

U.S. Department of the Interior / National Park Service
DSC / JUL 95 / 430 / 20038A

Visitor Experience

This zone would have a predominantly social atmosphere, with a high concentration of visitors and park staff. Frequent contacts with people would be expected, with little opportunity for solitude. Orientation and information would also be provided to help guide visitors. Most facilities and information would be accessible to visitors with disabilities.

Facilities

All major developments would be confined to this zone. Existing and potential modifications might include the visitor center, administrative facilities, surfaced parking areas, roads, maintenance facilities, residential areas, sewage treatment, and other support facilities.

Access

All roads would be paved to facilitate year-round access for most vehicles. People could reach primary park resources from high standard trails that would provide access for everyone, including visitors with disabilities.

Cultural Resource Considerations

Any introduced structures or facilities would be designed to blend with the cultural landscape and existing historic structures. Wherever possible previously disturbed sites would be used for new or expanded development to prevent damaging archeological sites. An investigation of archeological resources would be conducted before final site selection and before designing new or expanded facilities to determine if any resources would be affected. Site selection would be modified or designed based on the presence and location of significant resources. There would be a high priority for conducting thorough cultural resource inventories and evaluations.

Natural Resource Considerations

The natural character of the landscape in this zone would be maintained as much as possible, while accommodating high levels of visitor use. Inventories and the evaluation of sensitive natural features such as wetlands and unstable soils would be conducted. Wherever possible, previously disturbed sites would be used for new or expanded development. Native plant materials would be used for revegetation. More intensive methods for maintenance such as mowing, pruning, and fertilizing would be acceptable procedures for this zone, recognizing that cultural landscape values may need to be considered before selecting maintenance techniques. A relatively high level of resource degradation would be tolerated to meet the needs of high visitor use.

PECOS PUEBLO / MISSION RUINS ZONE

The outstanding cultural resources in this zone are critical to the significance of the park and its primary interpretive themes. This zone is undergoing active preservation to protect resources from degradation. The Pecos Pueblo / mission ruins zone has accommodated high levels of use and would continue to do so. Strict regulation and monitoring of this use would be required to protect cultural resources.

Visitor Experience

This zone would provide the primary experience for understanding the prehistory and early settlement history of the park. There would be frequent contacts with other visitors and park staff in this zone because of the importance of this resource for interpretation and education. Park staff would be easily accessible.

Facilities

No major visitor or administrative facilities would be built in this zone. Only those minor facilities and structures that support the interpretation and preservation of the resource would be provided, such as low-profile interpretive panels. Minor support structures would be allowed such as small comfort stations, benches, and shade structures. All new support structures would be designed to meet the needs of visitors with disabilities.

Access

Vehicle access would be provided for visitors with disabilities and administrative personnel. Roads and parking would be located to minimize visual and physical impacts on cultural resources. Trails would be designed to a high standard and would also provide access for visitors with disabilities.

Cultural Resource Considerations

The highest level of intervention to preserve and stabilize resources in this zone would be employed. The extensive study and research of resources would continue to offer information for both interpretation and resource management decisions. Intensive monitoring and evaluation would also be conducted to protect resources from degradation associated with visitor use. There would be a high priority for conducting thorough cultural resource inventories and evaluations.

Natural Resource Considerations

The natural character of the surroundings would be maintained. Mowing and clearing would be allowed to prevent damage and preserve the cultural setting. Only native plant materials, consistent with the cultural landscape, would be used for revegetation.

RURAL ZONE

The rural zone would be critical to introduce visitors to the character of the Pecos landscape as it evolved from a natural environment to one that was changed by humans over time. While areas historically left to natural processes would be perpetuated, those areas commonly used might be maintained using contemporary or historic methods. The rural zone would bring the visitor closer to the cultural/natural landscape but still offer some conveniences such as restrooms, water, trails, and interpretive exhibits. There would be a moderate number of other visitors and park staff, but some solitude might be found here especially during off-peak hours. Visitors would need to commit some time and energy to use this area.

Visitor Experience

In the rural zone there would be a sense of remoteness and seclusion but not of isolation from other people. Contact with other visitors would be expected intermittently. NPS staff would be available primarily for law enforcement functions; interpretive staff would typically not be present in this area. Interpretive media would be simple interior and exterior exhibits. Orientation and safety information would be prominently displayed at designated trailheads.

Facilities

Moderate facility development would provide visitors with comfort stations, interpretive exhibits, parking, and minor structures such as shelters and benches. Comfort stations would be designed to eliminate the need for septic fields and tanks. All facilities would be designed to meet the needs of visitors with disabilities.

Access

Pedestrian access would be emphasized in this zone. Limited gravel roads would direct visitors to key staging areas. No offroad vehicles or bikes would be permitted. Gravel or stabilized gravel trails would provide access to features and destinations in the zone. Trails would vary in length and be designed to a medium standard, offering a range of hiking experiences. Some trails in this zone might not be accessible to visitors with disabilities.

Cultural Resource Considerations

Preserving the cultural landscape of this zone would be a critical part of its management. The significant resources associated with the historically used landscape, especially the pastures from the ranching era, would be maintained. Other character-defining features would be preserved using conservation, stabilization, restoration, and rehabilitation methods as outlined in NPS-28. Treatment of archeological resources would also be guided by NPS-28. The key features will be identified in this draft plan and in future resource studies to evaluate the extent and specific means of preservation. Emphasis would be on preserving the cultural resource components and adaptively using historic structures. Key landscape components might require more intensive management, but full-fledged restoration would not be the goal. Some resources might be appropriate for future study. As in the development zone, inventories would be conducted prior to the design of new or expanded facilities.

Natural Resource Considerations

Natural processes in this zone would be preserved to the extent possible while balancing needs for cultural resource preservation and visitor use. Disturbed areas would be allowed to return to natural conditions. Active intervention, such as revegetating or repairing erosion hazards, might be required to restore damaged areas. In general, however, natural processes would be relied on to reclaim most areas. New facilities would be situated to minimize damage to natural features, especially sensitive water resources. Resource-damaging activities from visitor use or park maintenance would be closely monitored to determine acceptable levels of resource degradation.

CULTURAL / NATURAL RESOURCE ZONE

This zone would not be managed to accommodate general visitors but rather would function as an area for general resource protection. This zone would contain cultural and natural resources that are too sensitive to open to the public. Some areas lack adequate information regarding these resources. Many of them would have research potential and have particular interest to specialized scholars. Also, some of these resources might be of importance to traditionally associated groups. Other than research and minimal stabilization, few other activities would take place in this zone.

Visitor Experience

Visitors would benefit from this zone primarily through distant views and offsite interpretation. There would be no direct interaction in this area for general visitors. Researchers, scholars, and visitors with special interests would have access to this area with permission from the park superintendent. Traditionally associated groups would have access to this area, and park management would work with these groups to ensure privacy during their activities.

Facilities

No facilities would be developed in this zone.

Access

Administrative access roads would be maintained where necessary. Roads would be gravel surfaced and designed for low-volume traffic.

Cultural Resource Considerations

Conservation and minimal stabilization would be the primary means of preservation. Resources listed on or eligible for listing on the National Register of Historic Places would have priority for preservation treatment.

Natural Resource Considerations

This zone would include ecologically sensitive resources that would be preserved to the extent possible, while the zone would accommodate low-density uses such as research and use by traditionally associated groups. Naturally occurring species would be maintained or reestablished. Natural processes that do not impair significant cultural resources would be allowed to perpetuate the environment.

BACKCOUNTRY ZONE

This zone is dominated by ponderosa pine and Douglas-fir and has been relatively undisturbed by human use. The zone would provide a sense of being immersed in a natural landscape, away from comforts and conveniences. Except for primitive trails, few modifications would be evident. There would be infrequent contacts with other visitors or with NPS personnel. Natural processes and conditions would be perpetuated in this zone.

Visitor Experience

The backcountry zone would provide opportunities for solitude in a natural environment. Opportunities for independence, closeness to nature, tranquillity, and the application of outdoor skills would be moderate to high. The probability of encountering other visitors would be low.

Facilities

Offsite interpretation and education would be emphasized. No exhibits or signs would be provided. All rules and regulations would be explained to visitors before entering the backcountry.

Access

Access would be challenging. Trails would be lightly maintained, composed of native materials, and might have moderate to significant variations in grade. No vehicle access for visitors would be developed. Access might be regulated for resource protection and safety.

Cultural Resource Considerations

Cultural resources listed on or eligible for listing on the National Register of Historic Places would have priority for preservation treatment.

Natural Resource Considerations

The natural environment would be preserved while accommodating low-density use. Monitoring would be carried out, and tolerance to resource degradation due to visitor use would be low in this zone. Natural processes would be the primary means of restoring natural conditions to damaged areas.

RIVER/STREAM ZONE

This zone would contain sensitive riparian environments. A primary management concern for this zone would be preserving, monitoring, protecting, and studying the riparian ecosystem. The zone would allow visitor use with certain areas restricted based on the sensitive nature of cultural and natural resources. The boundaries of this zone would be defined by the 100-year floodplain.

Visitor Experience

This zone would provide a sense of entering an oasis in an arid landscape. The environment would offer opportunities for a relatively high degree of physical exertion, challenge, and adventure. Opportunities would also exist for independence, closeness to nature, and tranquillity. The probability of encountering other visitors would be low to moderate.

Facilities

Facilities would be limited to trails and small interpretive signs. Designated trails would be constructed to minimize resource degradation.

Access

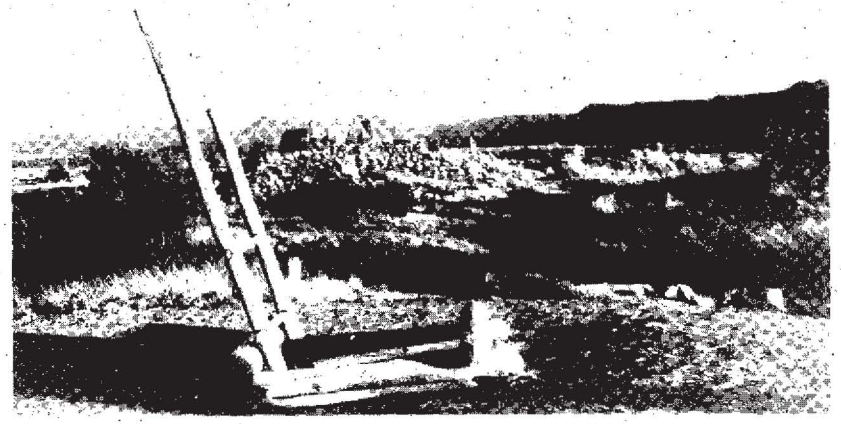
Access to the river/stream zone would be extremely limited, and some areas would be only be accessible by boardwalk trails, which would protect soils and riparian vegetation.

Cultural Resource Considerations

Management of cultural resources in this zone would be similar to management in the cultural/natural resource zone.

Natural Resource Considerations

This zone would necessitate a very high level of management to protect resources and provide for public safety; for example, fences, boardwalks, special fishing access, and permit requirements. Resource modification would be minimal. Tolerance for natural resource degradation due to visitor use would be extremely low.



STUDIES AND PRODUCTS NEEDED TO IMPLEMENT THE ALTERNATIVES

The following is a summary list of resource management studies and products that the Park Service would fund once the resource management plan was completed. These are not listed in order of priority.

Cultural Resources

- Prepare a cultural landscape report.
- Survey the Baca mine/cave for archeological and historic resources, evaluate any resources located, and integrate appropriate management strategies into a cave management plan.
- Prepare historic structure reports for the ranch complex (historic structure reports for Pecos Pueblo, Pigeon's ranch, and Kozlowski's are currently underway by the Southwest System Support Office).
- Develop historic resources study for the ranch, including a determination of eligibility for the national register (a historic resources study is underway for the Civil War battlefield).
- Conduct ethnobotanical studies.
- Prepare a special study to identify treatment recommendations for threatened resources, such as ruins that could be backfilled.
- Update collections management and storage plans.
- Develop a treatment plan for the historic mill site and La Placita to address stabilization requirements and other protective measures.
- Conduct a cadastral survey, and mark all park boundaries.

Natural Resources

- Develop a vegetation management plan that would include an approach to vegetation restoration; in the interim, in areas without developments, natural processes would generally be depended on to remove alien species and replace them with native species.
- Develop an integrated pest management program to reduce exotic plant populations; initiate a program to test the effectiveness of controlling kochia growing on the ruins.
- Develop a fire management plan.
- Develop a revegetation plan for disturbed areas that identifies appropriate seed mixes and plant species.
- Develop a fishing management plan.

Cultural and Natural Resources

- Prepare a carrying capacity study to develop a park program for monitoring and evaluating park resources (cultural and natural).
- Prepare a ranch road treatment plan to evaluate all ranch roads for required administrative use, and develop recommendations for maintenance, closure, or re-routing of existing roads; evaluate impacts on cultural and natural resources.
- Develop a sewage treatment study of alternatives for visitor and park facilities.

RESOURCE MANAGEMENT ACTIONS

The following is a summary list of resource management activities the park would conduct on an ongoing basis. These activities would include resource inventories, research, resource management programs, and consultation. The park's resource protection and management program would be primarily based on these efforts.

Cultural Resources

- Inventory and collect baseline data on cultural resources, including roads, trails, and bridges in all park units. Prioritize survey needs.
- Evaluate new and previously known resources for eligibility for listing on the National Register of Historic Places. Prepare nomination forms and update as necessary.
- Conduct ethnobotanical surveys, in consultation with Jemez Pueblo and other concerned traditional use groups to identify plants that are part of traditional use and/or have special medicinal or religious significance.
- Conduct historic water use and water rights research.
- Inventory and evaluate cultural resource collections in and out of the park.

- Develop a resource database capability that could be used to analyze and correlate park data, and monitor cultural resource conditions in all park units.
- Work cooperatively with local communities and traditional use groups to protect cultural resources that are associated with Pecos but situated outside park boundaries.
- Work cooperatively with local communities and neighbors to preserve the landscape integrity.
- In consultation with concerned traditional use groups, review park education programs and resource preservation programs to ensure sensitivity to ethnographic concerns.
- Develop outreach programs for local communities to educate schoolchildren and their parents regarding the protection and appreciation of cultural resources.

Natural Resources

- Collect baseline resource information on soils, geology, plants, animals, and paleontological resources.
- Collect information on plants in the park that are listed as sensitive by the state or federal government.
- Continue to update the park's bird, amphibian, reptile, mammal, invertebrate, and plant inventories.
- Identify and monitor the effects of exotic plant and animal species on native populations.
- Conduct a comprehensive survey to determine the status and condition of the Pecos River fishery.
- Collect baseline data on the present beaver population and its effects on the Pecos River's riparian area.
- Monitor the water quality of the Pecos River and Glorieta Creek.
- Collect baseline air quality data and establish a monitoring system.
- Initiate long-term monitoring of the park's natural resources, using the protocol of the long-term ecological research program.
- Identify indicators to be used to monitor resources in areas of visitor use, and use information to determine carrying capacity.
- Monitor activities outside the park that could threaten park resources.
- Coordinate cultural and natural resource management
- Develop a geographic information system (GIS) database.

PECOS UNIT ALTERNATIVES

ALTERNATIVE A (NO ACTION)

Development Zone

The development zone would include the Fogelson visitor center, the ranch house, and Kozlowski's Stage Stop. The other development areas identified for the Pecos unit — the northern boundary and the Gateway overlook — would not be developed under this alternative (refer to the Pecos Unit map in the "Management Zoning" section).

Pecos Pueblo / Mission Ruins Complex

Under the no-action alternative the Fogelson visitor center and the Pecos Pueblo / mission ruins complex would continue to be the only interpretive stops for most visitors. Visitors would receive general orientation and an overview of the park's story.

Visitor access would be limited to developed sites and trails or to special tours guided by park staff at the Pecos Pueblo / mission ruins complex area. Access would be limited to minimize the potential for visitors to affect sensitive cultural resources, and out of respect for the wishes of Pueblo people with ties to Pecos Pueblo. Most people would continue to reach this area by walking up the trail from the visitor center; vehicle access to the mission ruins would continue to be available for visitors with disabilities who are unable to use the trail system. A field near the existing administrative building would continue to be used for special events, such as traditional festivals and cultural demonstrations.

Under the no-action alternative most of the existing administrative facilities in the Pecos Pueblo / mission ruins complex area would remain in their present locations. No changes would be made to existing visitor facilities. The existing picnic facility, parking area, and restrooms would remain near the mission.

OVERVIEW: PECOS UNIT ALTERNATIVE A (NO ACTION)

Under the no-action alternative for the Pecos unit, there would be no significant changes in present management and use of Pecos National Historical Park (see Alternative A (No Action) — Pecos Unit map). Existing park management strategies and programs, as outlined in the 1992 Interim Operations Plan, would continue without any major changes. The only other actions the Park Service would take would be those necessary to comply with state and federal laws, protect natural and cultural resources, and address health and safety issues. Under this alternative the actions of the 1992 Interim Operations Plan would become permanent facilities and practices.

The primary focus of visitor activity under the no-action alternative would continue to be at the Pecos Pueblo / mission ruins complex. The interpretive emphasis would be on the historic continuum of the Pecos area from prehistoric times to the 20th century. No new areas of the park would be opened to public use, and no new visitor facilities would be provided. The Forked Lightning Ranch additions surrounding the former national monument would serve primarily to protect the views from the Pecos Pueblo / mission ruins complex and to preserve the historic scene.

PECOS UNIT ALTERNATIVE A

Kozlowski's Stage Stop

The interpretation of Kozlowski's Stage Stop and its relationship to the Santa Fe Trail and Civil War era would continue to be provided at the Fogelson visitor center.

Forked Lightning Ranch

The existing roads on the Forked Lightning Ranch addition do not meet NPS safety standards for public use and would remain closed to visitors. The ranch house would be used for park administration and operations.

Gateway Overlook

No facilities or visitor access would be developed in this area. Natural processes would be allowed to gradually vegetate disturbed areas.

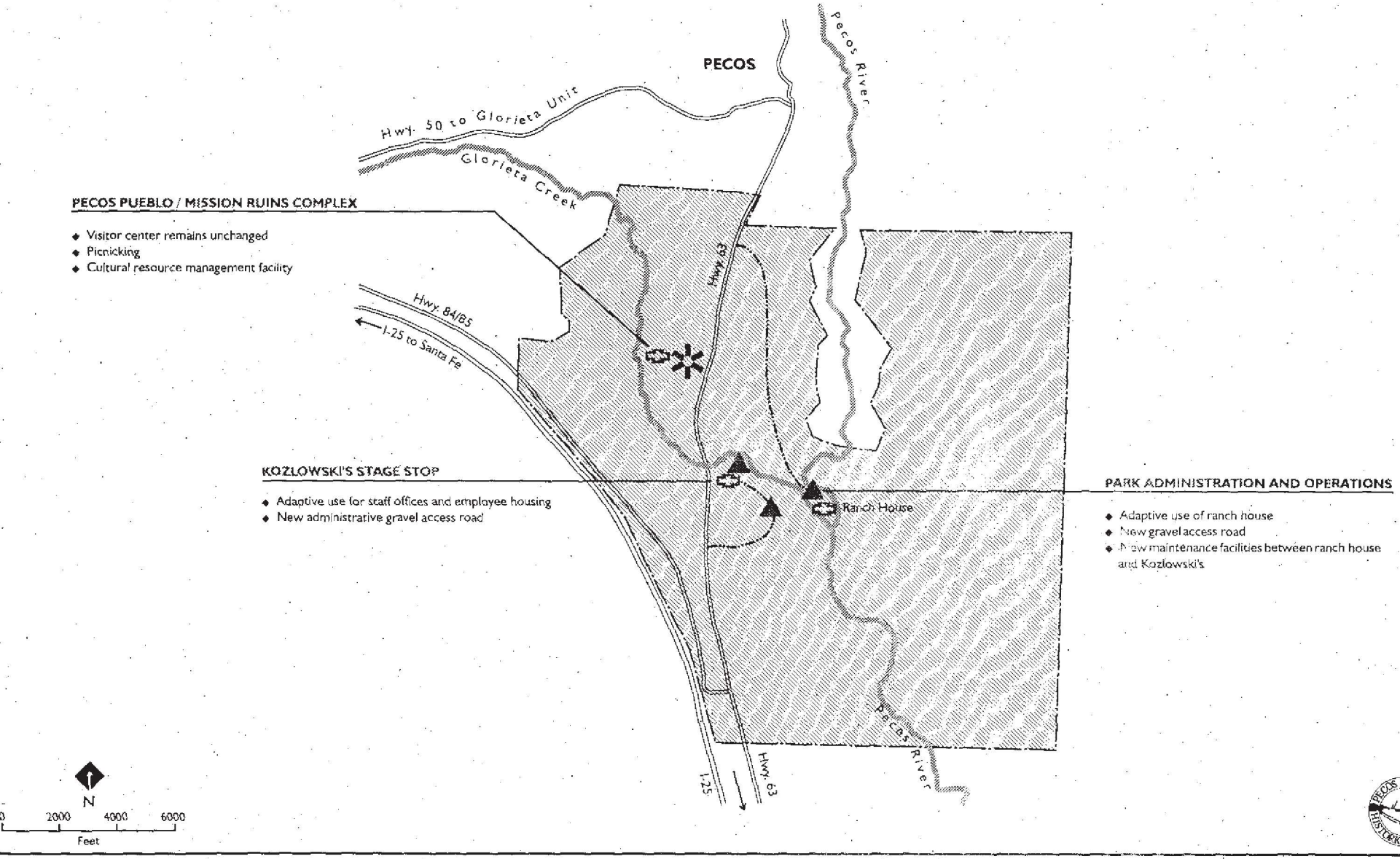
Park Administration and Operations

The existing park administrative facilities are intruding on park resources, are dilapidated, or do not have enough space to meet the increase in park operations and staffing. In addition, many existing facilities present employee health and safety concerns. The ranch house is now in the process of being modified to meet building standards. Under this alternative the ranch house would become the permanent headquarters for park administration and operations. The existing administrative building at the ruins would continue to be used for cultural resource management and would serve as a curatorial facility.

A low-volume gravel access road would be developed from the northern park boundary to the ranch house to provide access. The access road would follow an existing ranch road with some variations in alignment to avoid sensitive cultural and natural resources. The existing one-way bridge would be used for pedestrian access.

Because of health and safety concerns, the existing temporary maintenance building would be removed, and a new 4,750-square-foot facility constructed on a previously disturbed site near Kozlowski's Stage Stop. This facility would include work space for maintenance activities as well as office space, materials and equipment storage, and a lunchroom/lockers/shower area. Careful design and siting of this facility would help reduce visual intrusion on the cultural landscape and help prevent the destruction of archeological resources. The existing trading post would be used for part of the maintenance function.

All other park administrative facilities would remain in their present locations and would not be significantly expanded or improved. The existing trailers, which were recently removed, would be replaced by two housing units. The casita near the ranch house would also be converted to park housing.



Paved Road

Gravel Road

Visitor Facilities

Park Administration

Park Feature

Park Boundary

Pecos Unit

ALTERNATIVE A

PECOS NATIONAL HISTORICAL PARK

Santa Fe and San Miguel County ◆ New Mexico

U.S. Department of the Interior / National Park Service
DSC / JUL 95 / 430 / 20025A

PECOS UNIT
ALTERNATIVE B

OVERVIEW: PECOS UNIT ALTERNATIVE B (PROPOSED ACTION)

Under the proposed action for the Pecos unit visitors would have an opportunity to learn about the continuum of use in the Pecos area from prehistoric times through the 20th century. New visitor facilities would emphasize trail development and direct visitors to interpretive opportunities at trailheads and overlooks. Two primary staging areas would be provided — the existing Fogelson visitor center and Kozlowski's Stage Stop (see Alternative B (Proposed Action) — Pecos Unit map). Both staging areas would include parking, orientation, trailheads, and other support facilities. The existing visitor center would be expanded to provide more office space and increase parking capacity. Kozlowski's Stage Stop would be adapted to provide a staffed visitor interpretive facility. A network of trails would be developed from these staging areas to other points of interest.

A new park administrative and operations facility would be developed near the village of Pecos at the northern park boundary. This facility would include offices, curatorial space, a maintenance facility, and employee housing, and it would provide parking and storage areas. The existing facilities near the Pecos Pueblo / mission ruins complex would be removed.

The ranch house would be adapted for use as a resource education facility for schools and other groups, including the possibility for overnight use for special programs. Primitive trails would be provided in the rugged terrain east of the Pecos River.

ALTERNATIVE B (PROPOSED ACTION)

Development Zone

Under the proposed action for the Pecos unit development would be located at the northern park boundary, the visitor center, Kozlowski's Stage Stop, and the ranch house areas. The Gateway overlook would not be developed under this alternative (refer to the Pecos Unit map in the "Management Zoning" section).

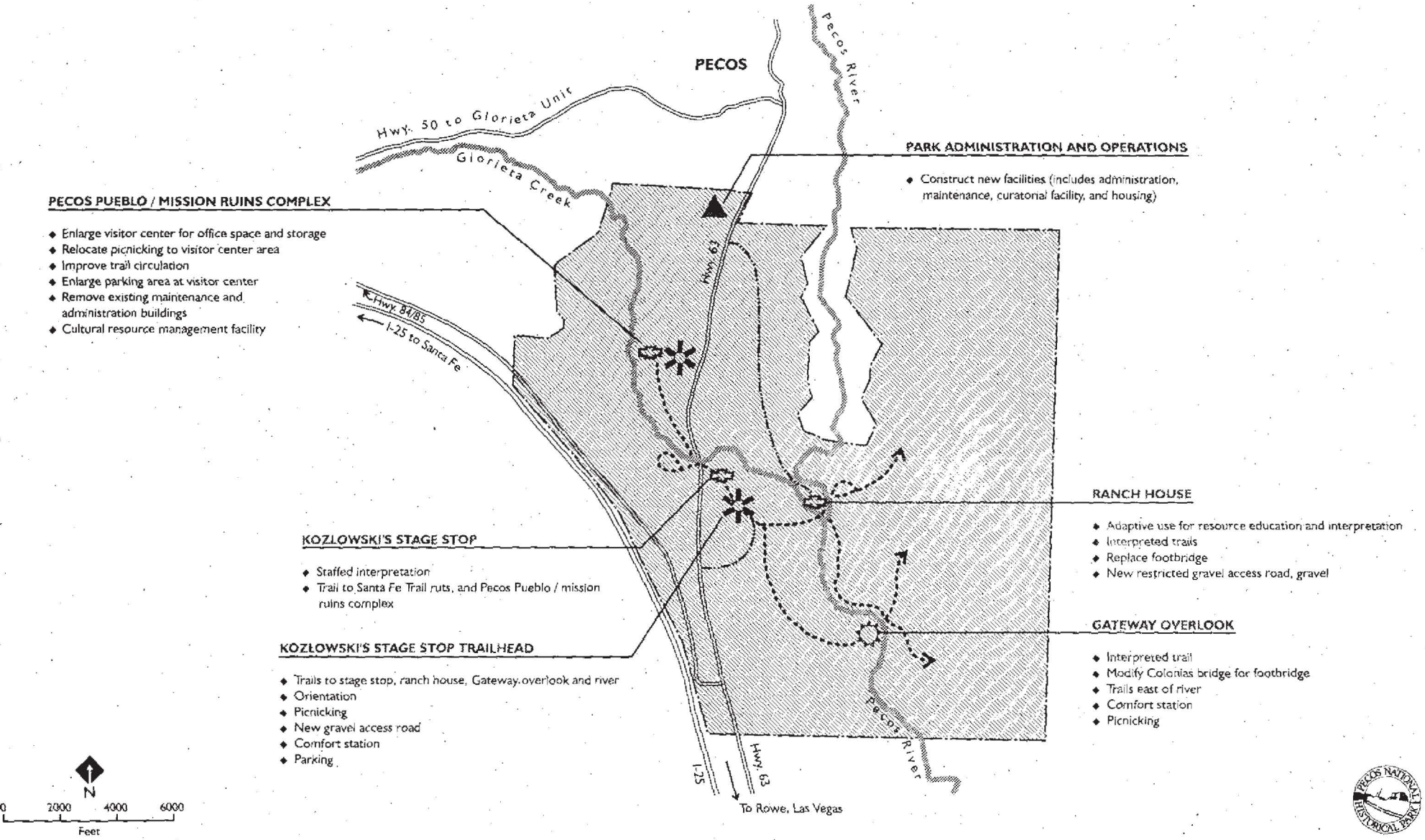
Pecos Pueblo / Mission Ruins Complex

Providing visitors with opportunities to enjoy views similar to what early inhabitants may have seen has been identified as an important part of the park's significance. For this reason, a primary goal of the proposed action would be to remove or minimize all contemporary intrusions from the Pecos Pueblo / mission ruins complex area (see Pecos Pueblo / Mission Ruins Complex map).

The Fogelson visitor center was designed to minimize intrusions on views from the Pecos Pueblo / mission ruins complex and continues to provide a critical interpretive and orientation function in the park.

General orientation would be expanded to include new park facilities, and an overview of the park's story would continue to be available there. The interpretive objective at the visitor center would be to provide visitors with a comprehensive explanation of the historical continuum. Only a few modifications would be proposed for the building. The visitor center would be enlarged by 500 square feet to include an office for three employees and storage for equipment and sales. Architectural additions would be in keeping with the existing character and design of the building and the landscape. The Fogelson visitor center would be one of two visitor staging areas in the Pecos unit and would continue to be the primary stop for most visitors. Since visitation could be expected to increase, the visitor center parking area would be expanded to accommodate approximately 50 cars and 5 oversized vehicles. There would also be 4 spaces for visitors with disabilities. All improvements to the parking area and future parking activities would not be seen or heard by park visitors at the Pecos pueblo / mission ruins complex. The existing sewage treatment system would be replaced with a more efficient system.

Because of the sensitivity of cultural resources in Pecos National Historical Park, visitor access throughout the Pecos Pueblo / mission ruins complex area would be limited to developed sites and trails or to special tours guided by park staff. Visitors would continue to walk from the visitor center to the Pecos Pueblo / mission ruins complex. The existing trail would be reconfigured to provide a return loop back to the visitor center and would help ensure that visitors would see all of the site. New signs would be erected, and/or a map would be distributed to provide a more logical progression for interpreting the Pueblo and Spanish colonial period story, to help ensure that visitors see all of the site, and to eliminate confusion along the route. Limited vehicle access and parking at the mission ruins complex would continue to be provided for visitors with disabilities. Vehicle access would be rerouted to move the road out of view of the mission ruins complex and away from the return trail to the visitor center.



Pecos Unit

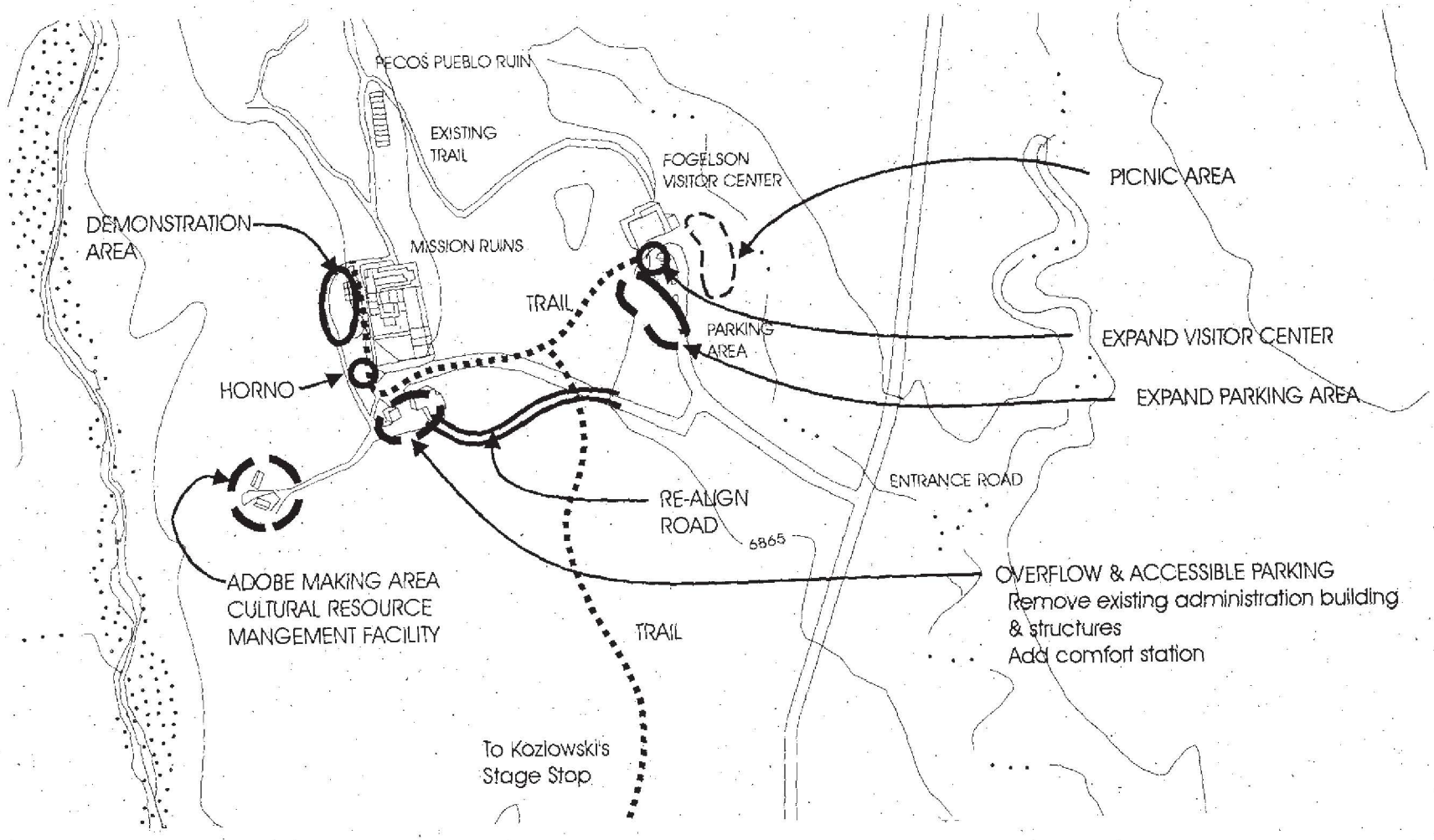
ALTERNATIVE B (PROPOSED ACTION)

PECOS NATIONAL HISTORICAL PARK

Santa Fe and San Miguel County ◆ New Mexico

U.S. Department of the Interior / National Park Service

DSC / JUL 95 / 430 / 20026A



N

Not to Scale

Pecos Pueblo / Mission Ruins Complex
DEVELOPMENT CONCEPT PLAN
PECOS NATIONAL HISTORICAL PARK

Santa Fe and San Miguel County ◆ New Mexico

U.S. Department of the Interior / National Park Service

DSC / JUL 95 / 430 / 20023A

PECOS UNIT
ALTERNATIVE B

Park administrative, maintenance, cultural resource management, curatorial facilities, and employee housing would be removed from the Pecos Pueblo / mission ruins complex, and new facilities would be provided in a different location. This would move NPS operations out of the view and reduce interference with the visitor experience at the mission ruins complex. The disturbed area would be revegetated with native plant materials to blend in with the surrounding scenery. Visitors would be provided with opportunities to enjoy views closer to what this area may have been during the pueblo / mission period. Ruins preservation, storage, equipment, and work areas would remain near the ruins area but would be relocated out of view of visitors.

The existing picnic area by the Pecos Pueblo / mission ruins complex would be relocated to a site near the visitor center. The new picnic area would be visually screened from the ruins and would have 20 picnic tables. Shade structures would be built over several of the tables to provide relief from the sun. Restrooms and water would be available at the visitor center nearby.

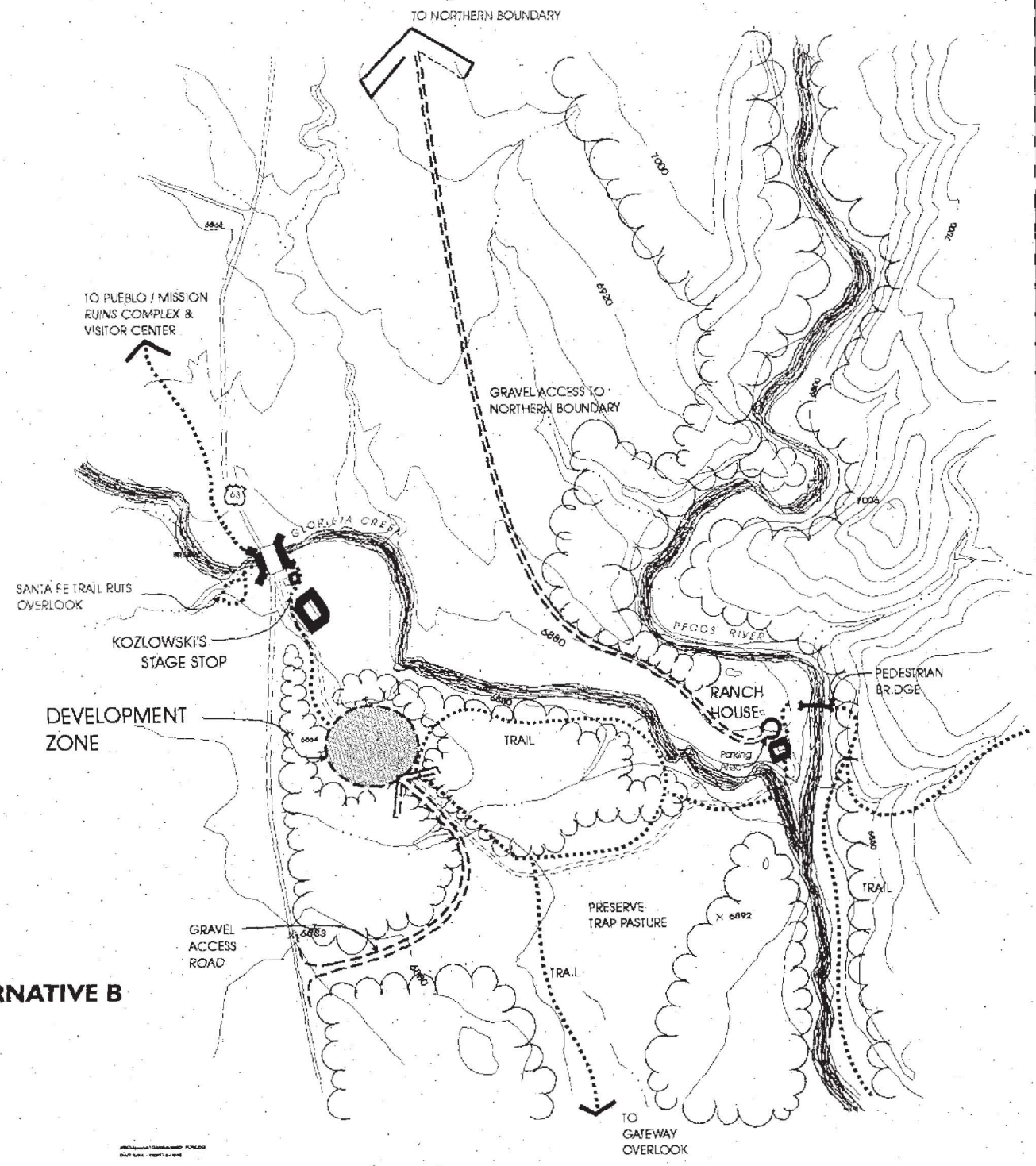
A new 0.75-mile foot trail would be developed between the ruins area and Kozlowski's Stage Stop area. Access across Glorieta Creek would be provided by a pedestrian lane on the new state highway bridge or a separate pedestrian bridge.

Kozlowski's Stage Stop

The Kozlowski's Stage Stop area would be the second visitor staging area in the Pecos unit and would be the principal location for interpreting the history of the area following the Pueblo and Spanish mission eras (see Kozlowski's Stage Stop and Ranch House Area – Alternative B map). Interpretation at the site would focus on the role of the stage stop along the Santa Fe Trail and the Civil War. It would also interpret the ranching period. The focused interpretation at this staging area would complement the overview information provided at the Fogelson visitor center. The stage stop structure would be rehabilitated to incorporate a small staffed area and interior exhibit space for educational displays.

A number of Santa Fe National Historic Trail resources are nearby, including trail ruts on the west side of NM 63. A short trail from the stage stop under the Glorieta Creek bridge would lead to a designated area where the ruts would be viewed and interpreted, and the trail would continue along the south side of Glorieta Creek to a viewpoint of the Pecos Pueblo / mission ruins complex.

An entrance road would be established from NM 63 to a new parking area at Kozlowski's, which would have spaces for 20 cars and 4 oversized vehicles. Orientation information, restrooms, and picnic facilities would be available at the parking area. Restroom facilities would be designed to minimize environmental impacts. These facilities would be screened by existing vegetation to avoid impacting views from open pasture areas and Kozlowski's. A 0.25-mile trail would lead from the new parking area to the stage stop. Two parking spaces near the stage stop would be provided for visitors with disabilities. The existing road to Kozlowski's would be upgraded to accommodate two-way traffic to allow access for visitors with disabilities.



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Not to Scale

Kozlowski's Stage Stop & Ranch House Area

DEVELOPMENT CONCEPT PLAN — ALTERNATIVE B

PECOS NATIONAL HISTORICAL PARK

Santa Fe and San Miguel County ♦ New Mexico

U.S. Department of the Interior / National Park Service
DSC / JUL 95 / 430 / 20033A

PECOS UNIT
ALTERNATIVE B

The Kozlowski complex and associated landscape would be managed to reflect the interpretive objectives to educate visitors on human activity and interaction with the natural environment from prehistoric times through the 20th century. Further research and analysis would be needed before choosing which landscape features and structures would be appropriate to preserve and interpret under this approach and to set goals for future landscape management.

Forked Lightning Ranch

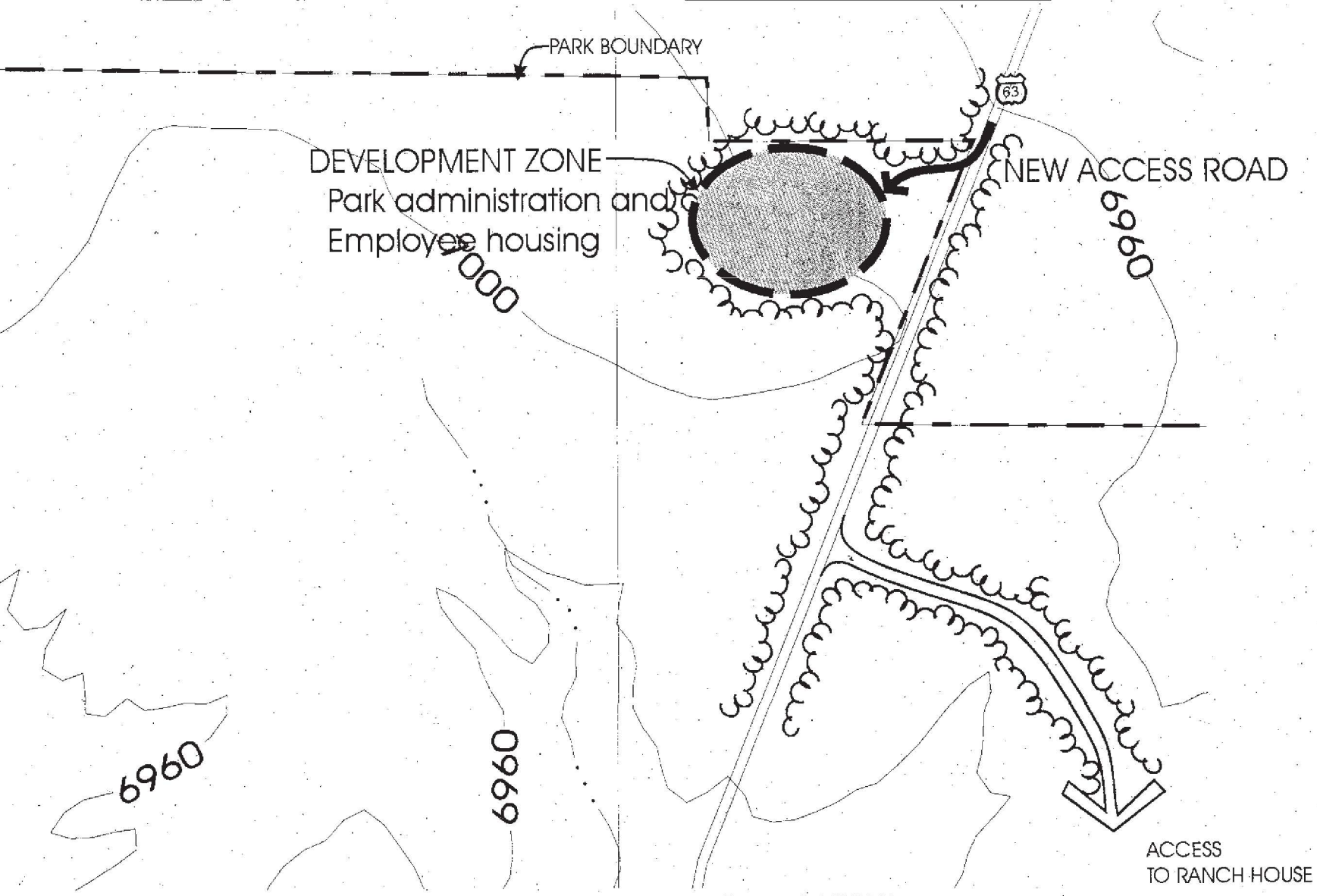
The ranch house would be adaptively used for resource education and interpretive activities for school and other groups, including the possibility of overnight use of the ranch for special programs. Ranch house visitors would park at the Kozlowski's trailhead and take a 0.75-mile trail to the ranch house or to the Gateway overlook / Pecos River trail. A former ranch road from the northern boundary to the ranch house would be upgraded to a two-way gravel road for administrative use. Special tour use would be allowed on the road. A 0.5-mile interpretive trail and new footbridge would be developed from the ranch house to the historic mill area. This trail would tie into the network of trails east of the Pecos River and complete the loop from the Gateway overlook. To prevent damage to sensitive resources, some areas would be fenced, and the trail would be designed to avoid cultural sites.

To provide visitors with an understanding of ranching and its influence on the landscape, the National Park Service would maintain some of the existing pastures. Two pastures, the Trap pasture and the Middle pasture, would be maintained initially to provide an interpretive setting along trails to the ranch house and to the Gateway overlook. Additional studies and assessments would need to be done to evaluate the feasibility and desirability of maintaining other pasture areas as well as other reasonable methods to maintain this aspect of the historic scene without disturbing cultural resources.

Gateway Overlook

Under the proposed action a new 1.5-mile trail would be constructed from the Kozlowski Stage Stop parking area to the Gateway overlook. This interpretive overlook would provide visitors with a view of the Pecos River valley gateway encompassing the Pecos Pueblo / mission ruins complex and the Santa Fe Trail corridor. Visitors would also be able to view La Placita, the only Hispanic frontier homestead protected by the National Park Service. The facilities and the overlook would not be visible from critical viewpoints.

Restroom facilities designed to minimize adverse impacts would be provided. Ten to 15 picnic tables would be provided out of the view of visitors approaching the overlook. The Colonias bridge would be rehabilitated for foot traffic and would be an access point for a network of trails (ranging from 0.25 mile to 10 miles) on the east side of the river, which would include a loop trail to the ranch house and historic mill site. More research, including archeological investigations, would be needed for this site, and it would require stabilization and other protective measures before being opened to visitation. Fishing would be managed to avoid adverse effects on the riparian area and associated fish and wildlife.



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Northern Boundary
DEVELOPMENT CONCEPT PLAN — ALTERNATIVE B
PECOS NATIONAL HISTORICAL PARK
Santa Fe and San Miguel County ♦ New Mexico
U.S. Department of the Interior / National Park Service
DSC / JUL 95 / 430 / 20031A

PECOS UNIT
ALTERNATIVE B

Park Administration and Operations

New facilities totaling 5,000 square feet for maintenance and 10,300 square feet for all other administrative operations (see appendix A for a more detailed description) would be constructed near the northern park boundary out of view from the park's primary resources (see Northern Boundary Facility map). This proposal was identified in the value analysis study process as the preferred means of accommodating administrative and maintenance facilities. The primary advantages of this location would be that administrative functions would be separated from visitor use areas, it would not be seen from primary visitor use areas, it would be the least costly to construct, and it would create greater opportunities to tie park administration with the local community by its proximity to the village of Pecos (see appendix B for a more detailed discussion of the value analysis). Included at the new location would be administrative and maintenance facilities, staff offices, a collections storage/curatorial facility, and staff housing. The staff housing near the administrative complex would help ensure protection of park resources. Staff housing in the casita would ensure a high level of security for park resources and facilities. An apartment in the casita would accommodate seasonals, VIPs, and researchers. To accommodate additional volunteers, RV hookups would be provided at the new administrative area.

PECOS UNIT
ALTERNATIVE C

OVERVIEW: PECOS UNIT ALTERNATIVE C

Pecos unit alternative C is similar to the proposed action because it emphasizes providing visitors with opportunities to learn about the entire historic continuum of the Pecos area, from prehistoric through modern times. However, under this alternative the historic continuum would be separated and interpreted at three easily accessible visitor staging areas — the Fogelson visitor center, Kozlowski's Stage Stop, and the Gateway overlook (see Alternative C — Pecos Unit map).

Each staging area would provide an overview of the park and its history but would focus in greater detail on a specific aspect of the continuum. Each of the staging areas would have vehicle access to ensure that the complete interpretive story would be easily accessible to all visitors.

The ranch house would be adapted to accommodate administrative offices, and a new maintenance facility would be developed between the ranch house and Kozlowski's. The existing facilities near the Pecos Pueblo / mission ruins complex would be removed. Primitive trails would be provided in the rugged terrain east of the Pecos River.

A new resource educational facility would be developed near the northern boundary for schools and other groups, as well as community functions.

ALTERNATIVE C

Development Zone

Management zoning in this alternative would be similar to the proposed action except that additional development would be located at the Gateway overlook area.

Pecos Pueblo / Mission Ruins Complex

The Fogelson visitor center would continue to function as a visitor facility and provide general orientation and an overview of the park's history. However, the visitor center's primary role would be to serve as one of three visitor staging areas (refer to the Pecos Pueblo / Mission Ruins Complex map under the proposed action). The interpretive story at this staging area would focus on the Pueblo/Spanish mission era history and complement the interpretive stories told at the other staging areas. As under the proposed action, the visitor center would be enlarged by about 500 square feet to provide space for interpretive staff offices. The existing sewage treatment system would be replaced with a more efficient system.

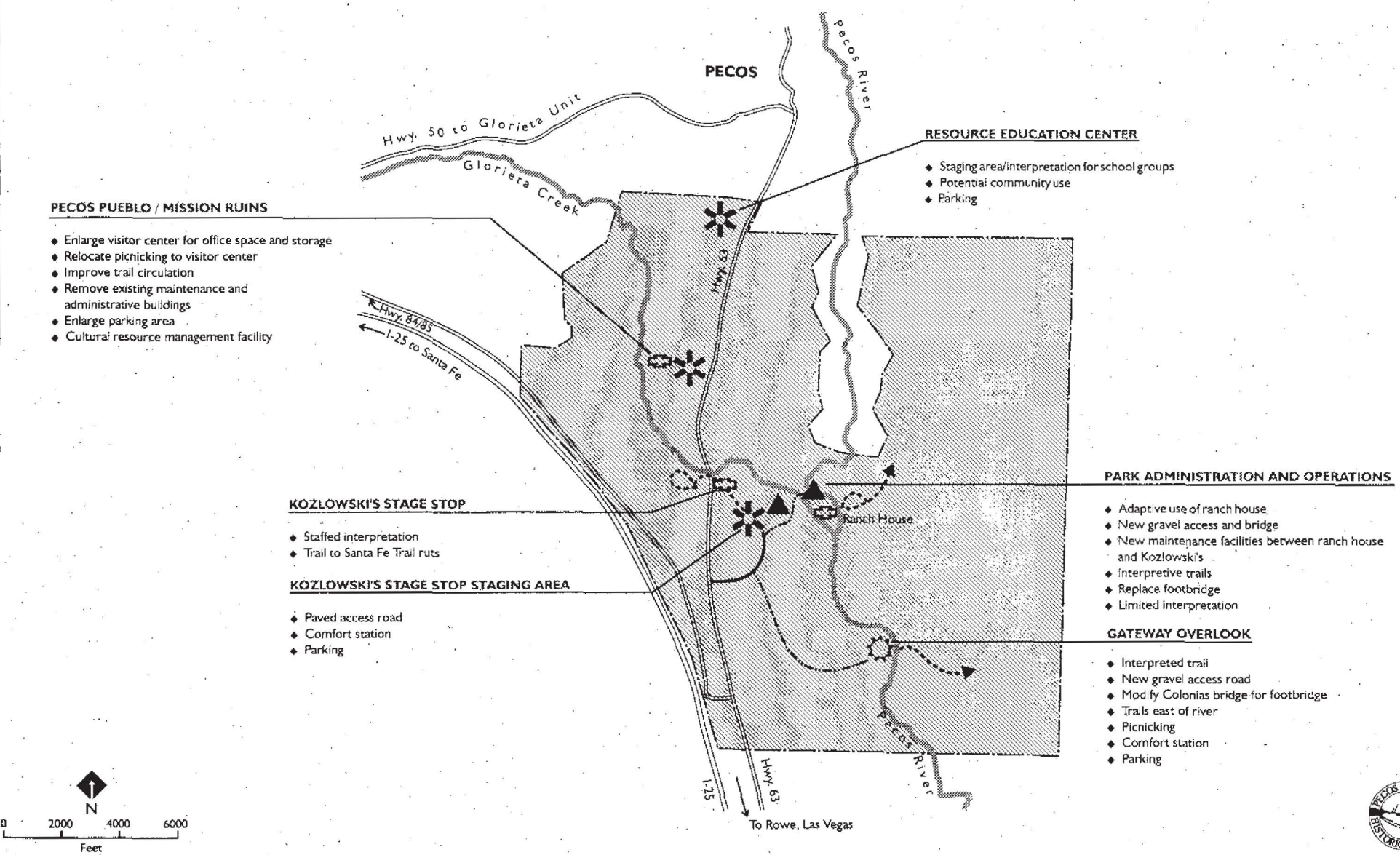
Because use would be expected to increase, and more space would be needed for buses, the parking area would expanded to accommodate a total of 50 cars and 5 oversized vehicles. Five spaces for visitors with disabilities would also be provided. Future parking activities would not be seen or heard by park visitors at the Pecos Pueblo / mission ruins complex.

As in the proposed action visitor access throughout the Pecos Pueblo / mission ruins complex area would be limited to developed sites and trails or to guided NPS tours. This action would be intended to ensure that impacts on sensitive resources would be minimized. Visitors would be able to walk from the visitor center to the Pecos Pueblo / mission ruins complex along the existing trail; limited vehicle access would be provided to the mission ruins complex for visitors with disabilities.

New signs would be erected and/or a map would be distributed to provide a more logical progression for interpreting the pueblo and Spanish colonial period story, to help ensure that visitors would see all of the site, and to eliminate confusion about which way to walk. A new trail back from the mission ruins complex to the visitor center parking lot also would be built so that visitors could take a more interesting loop trip.

The administrative office and maintenance functions would be relocated, the existing structures would be removed, and the area would be revegetated.

The ruins preservation area would be relocated to the area now used for maintenance storage and would be out of view of visitors.



Paved Road

Gravel Road

Pedestrian Trail

Park Feature

Visitor Facilities

Park Administration

Overlook

Park Boundary

Pecos Unit

ALTERNATIVE C

PECOS NATIONAL HISTORICAL PARK

Santa Fe and San Miguel County ◆ New Mexico

U.S. Department of the Interior / National Park Service

DSC / JUL 95 / 430 / 20030A

PECOS UNIT
ALTERNATIVE C

The picnic area would be relocated near the visitor center. The new picnic area would be screened from the ruins. It would have 20 picnic tables; shade structures would be built over several of the picnic tables to provide relief from the sun. Restrooms and water would be available at the visitor center nearby.

Kozlowski's Stage Stop and Ranch Area

Kozlowski's Stage Stop would be adaptively used as a second visitor center for the park, providing general orientation and information (see Kozlowski's Stage Stop and Ranch Area — Alternative C map). This facility would also serve as one of the park's three visitor staging areas. The specific interpretive focus at this staging area would be on the park's role during the Santa Fe Trail, Civil War, and ranching periods. The existing ranch buildings and structures, including the corrals, tack room, and barn, would be maintained and interpreted under this alternative. The stage stop would be staffed year-round.

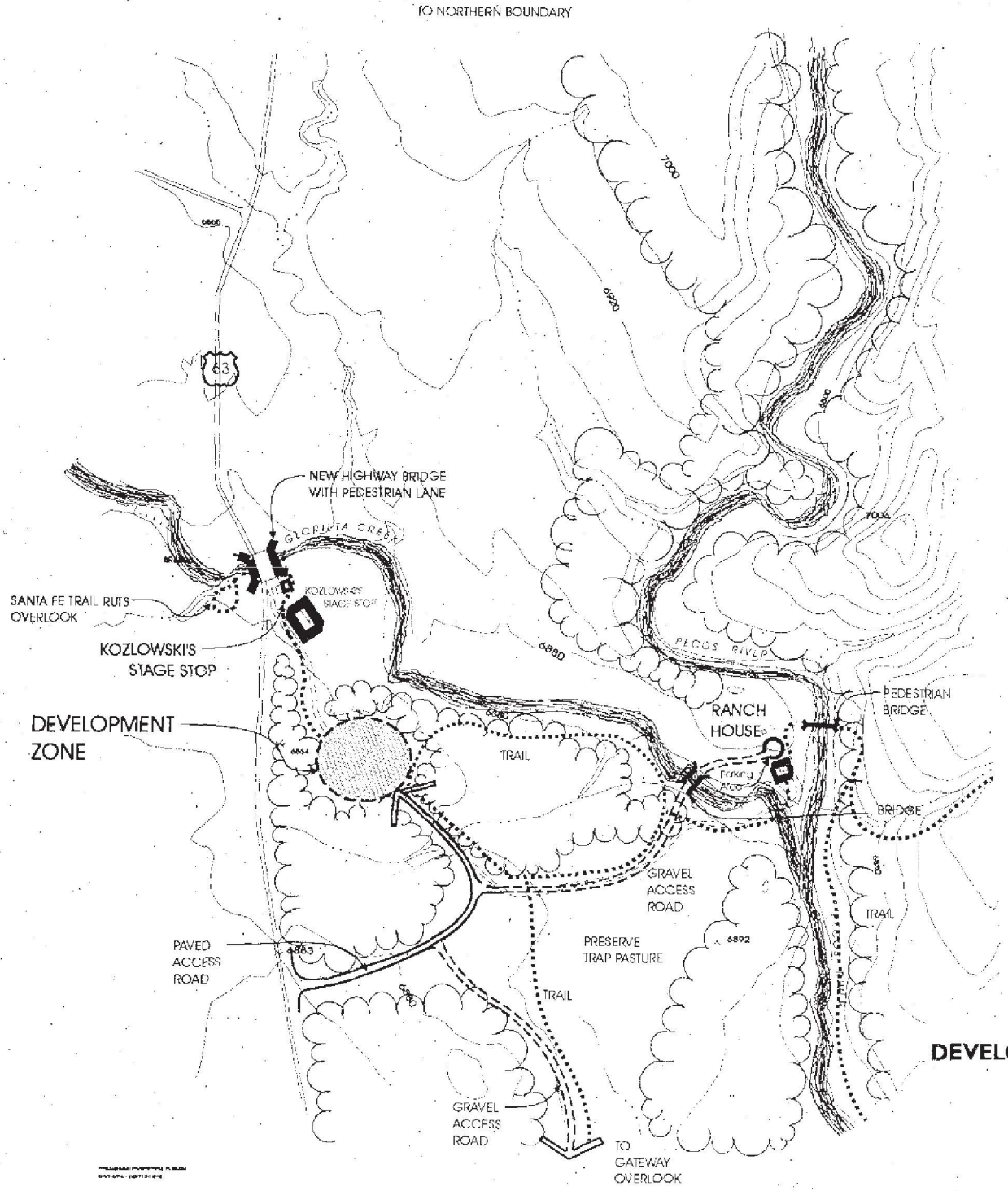
This site would be the first stop for visitors entering the park from the south on NM 63. Visitors would follow a 1-mile paved road to a new parking area near the stage stop. The parking area would have spaces for 20 cars and 4 oversized vehicles. There would also be 2 spaces for visitors with disabilities. A trail would lead from the parking area to the stage stop.

Restrooms and water would be available in a separate structure, which would be designed to minimize adverse impacts.

Gateway Overlook

The third visitor staging area under Pecos unit alternative C would be the Gateway overlook. Visitors would drive to this site using a new 1.5-mile road that would branch off from the junction with Kozlowski's access road. This road would have a gravel surface to encourage a leisurely pace and give visitors a sense of being in a ranch/rural landscape. The new road would follow existing ranch roads and traces for much of the way.

Although the Gateway overlook site would not be staffed, there would be a variety of interpretive exhibits offering visitors opportunities to learn about the area. Like the other two staging areas, the Gateway overlook would provide visitors with an overview of the Pecos area, including the Pecos River, Glorieta Pass, and the Pecos Pueblo / mission ruins complex. However, the interpretive focus of the Gateway overlook would be on La Placita, the Hispanic frontier settlement period, and the natural resources of the area. A short loop trail on the hilltop would allow visitors to view the park's resources in their geographical context. A trail would also be provided around the hillside and across the Pecos River to a viewpoint about 0.5 mile away to provide visitors the opportunity to see and appreciate the river and the view west from across the river. The existing Colonias bridge would be repaired and modified into a footbridge to provide a safe river crossing.



Kozlowski's Stage Stop & Ranch Area

DEVELOPMENT CONCEPT PLAN — ALTERNATIVE C

PECOS NATIONAL HISTORICAL PARK

Santa Fe and San Miguel County ◆ New Mexico

U.S. Department of the Interior / National Park Service

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PECOS UNIT
ALTERNATIVE C

Most visitor support facilities at the Gateway overlook would be near, but not on, the overlook to minimize contemporary intrusions on the landscape. Parking for 40 cars and four oversized vehicles would be provided in the old gravel pit. There would also be two parking spaces for visitors with disabilities. Other facilities provided at the gravel pit would include 20 picnic tables and restrooms that would be designed to minimize adverse impacts. The gravel pit would be landscaped to improve the aesthetics of the site.

In keeping with the broad interpretive focus of alternative C, more emphasis would be placed on informing visitors about ranching than under the proposed action. Ranching activities have altered much of the landscape of the Pecos unit. To provide visitors with an understanding of ranching and its effects on the landscape, the Park Service would actively preserve and maintain more resources associated with the ranching era than under the proposed action. While a cultural landscape report would be needed to provide detailed guidance, preliminary analysis indicates that such ranching-related cultural landscape resources as additional pasture areas, corrals, stock tanks, and fences would be preserved under this alternative.

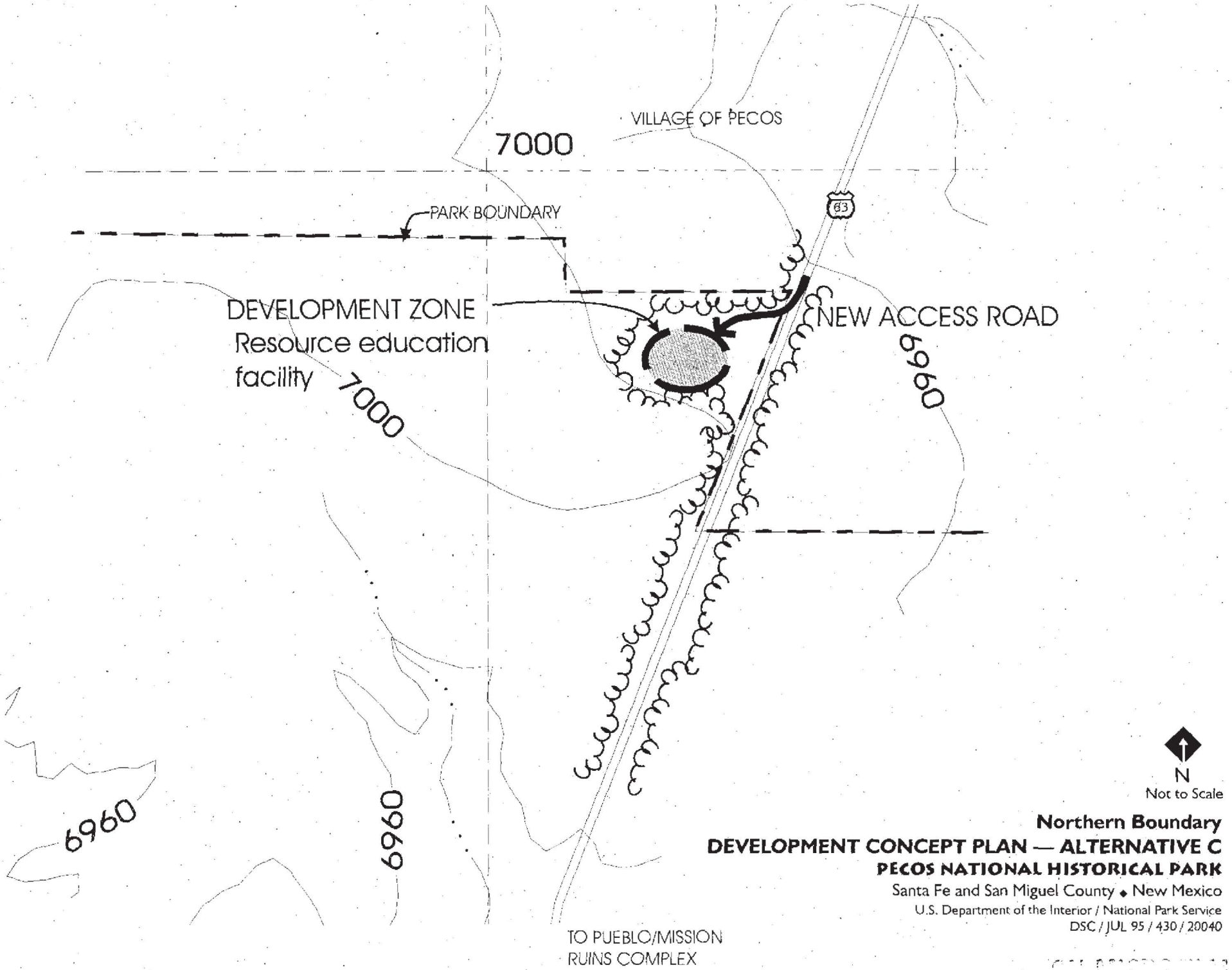
The ranch house and surrounding facilities would be adaptively used in this alternative for park administrative offices. Limited interpretation of the ranch house would be provided. The existing swinging footbridge would be replaced with a safe footbridge, and a 0.5-mile interpretive trail to the mill area would be developed.

Resource Education Center

Under alternative C a new resource education facility would be developed at the northern boundary of the park (refer to the Northern Boundary Facility map). This facility would include classrooms and meeting rooms for use by school groups, special interest groups, and local residents. The location near the village of Pecos would encourage community ties between the park and the local residents by creating a convenient place where community members could use park facilities. The location also would allow school groups to stage their activities before entering the rest of the park. In this manner, school and other groups would already be oriented before arriving at the visitor center, reducing conflicts between regular visitors and school groups. This type of flexible facility would improve the operation of park facilities because school groups would more likely use the space during the day, and community use would occur during evening and weekend hours. A small 15-car, 5-oversize vehicle parking area would accommodate visitors, including those with disabilities, and staff at the resource education facility.

Park Administration and Operations

New facilities totaling 5,000 square feet for maintenance and 10,300 square feet for all other administrative operations (see appendix A for a more detailed description) would be constructed near the northern park boundary out of view from the park's primary resources see Northern Boundary Facility map). This proposal was identified in the value analysis study process as the preferred means of accommodating the administrative and maintenance facilities. The primary advantages of this location would be that the administrative functions would be separated from visitor use areas,



Northern Boundary

DEVELOPMENT CONCEPT PLAN — ALTERNATIVE C

PECOS NATIONAL HISTORICAL PARK

Santa Fe and San Miguel County ◆ New Mexico

U.S. Department of the Interior / National Park Service

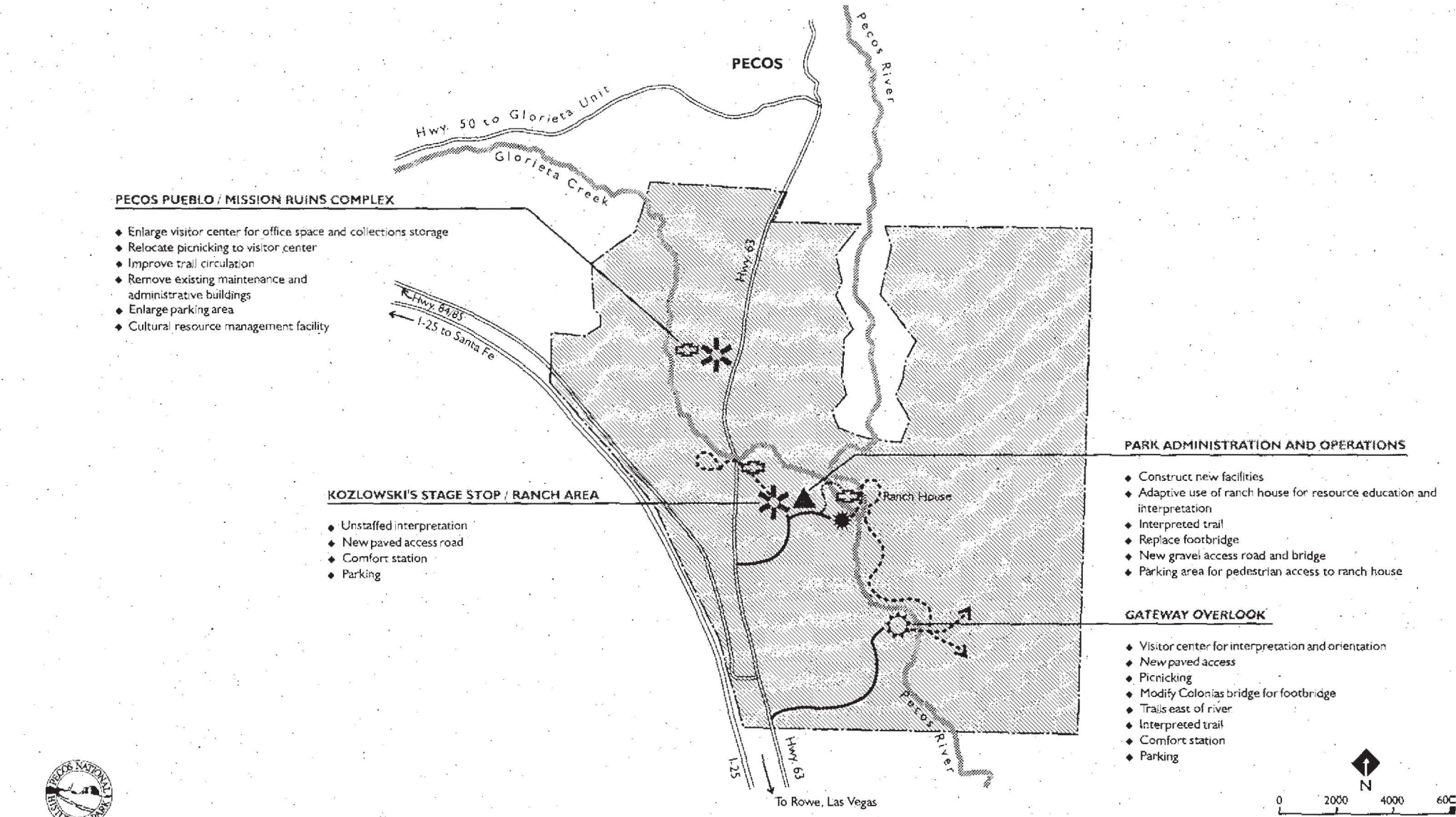
DSC / JUL 95 / 430 / 20040

PECOS UNIT ALTERNATIVE C

it would not be seen from primary visitor use areas, it would be the least costly to construct, and it would create greater opportunities to tie park administration with the local community by its proximity to the village of Pecos (see appendix B for a more detailed discussion of the value analysis). Included at the new location would be administrative and maintenance facilities, staff offices, a collections storage/curatorial facility, and staff housing. The staff housing near the administrative complex would help ensure protection of park resources. Staff housing in the casita would ensure a high level of security for park resources and facilities. An apartment in the casita would accommodate seasonal employees, VIPs, and researchers. To accommodate additional volunteers, RV hookups would be provided at the new administrative area.

All park administrative offices, with the exceptions of collection storage, curatorial functions, and the ruins preservation facility, would be relocated to the main ranch house, and the building would be expanded by approximately 3,000 square feet. A sensitive design and careful choice of materials and colors would be used so the addition would be compatible with the architectural qualities of the ranch and would not significantly intrude on the cultural landscape. These centrally located park administrative offices would enable park staff to respond quickly to visitor and resource needs. Therefore, a new 1.25-mile gravel road with a new bridge over Glorieta Creek would be built from the access road to Kozlowski's Stage Stop to provide safe, convenient access for park staff; the road would also connect with the maintenance area. The existing ranch house road would be retained as a feature of the ranching cultural landscape and could be used for pedestrian access to the ranch house.

Housing would be provided for three park employees inside the park, near but out of sight of the Pecos Pueblo / mission ruins complex (two housing units to replace existing trailers) and in the casita near the ranch house. These facilities would be needed to ensure a high level of security for park facilities and resources.



PECOS PUEBLO / MISSION RUINS COMPLEX

- Enlarge visitor center for office space and collections storage
- Relocate picnicking to visitor center
- Improve trail circulation
- Remove existing maintenance and administrative buildings
- Enlarge parking area
- Cultural resource management facility

KOZLOWSKI'S STAGE STOP / RANCH AREA

- Unstaffed interpretation
- New paved access road
- Comfort station
- Parking

PARK ADMINISTRATION AND OPERATIONS

- Construct new facilities
- Adaptive use of ranch house for resource education and interpretation
- Interpreted trail
- Replace footbridge
- New gravel access road and bridge
- Parking area for pedestrian access to ranch house

GATEWAY OVERLOOK

- Visitor center for interpretation and orientation
- New paved access
- Picnicking
- Modify Colonias bridge for footbridge
- Trails east of river
- Interpreted trail
- Comfort station
- Parking

Paved Road
Gravel Road
Pedestrian Trail
Park Feature
Visitor Facilities
Park Administration
Overlook
Park Boundary
Visitor Parking Are

Pecos Unit

ALTERNATIVE D

PECOS NATIONAL HISTORICAL PARK

Santa Fe and San Miguel County ◆ New Mexico

U.S. Department of the Interior / National Park Service
DSC / JUL 95 / 430 / 20029A

ALTERNATIVE D

Development Zone

Management zoning under this alternative would be similar to the proposed action except that additional development would be located near the ranch house and at the Gateway overlook. Also, there would be no development at the northern boundary.

Pecos Pueblo / Mission Ruins Complex

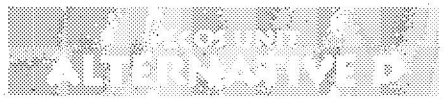
Use and management of the Pecos Pueblo / mission ruins complex would be similar to alternative C. Noncompatible facilities would be removed or relocated out of view from the Pecos Pueblo / mission ruins complex, access would be limited to designated trails, parking at the visitor center would be expanded, appropriate access would be provided for people with disabilities, and the sewage treatment system would be replaced. Because an overview of the continuum story would be presented at the new visitor center, interpretation at the Fogelson visitor center would focus on the mission story. Exhibits dealing with material other than the pueblo/mission era would be relocated to the new Gateway visitor center.

Kozlowski's Stage Stop

Kozlowski's Stage Stop would be adaptively used as an unstaffed interpretive facility (see Kozlowski's Stage Stop and Ranch Area – Alternative D map). Restrooms and water would be available and would be designed not to intrude on the historic scene and to minimize adverse impacts. The interpretive focus at this site would be on its role in the Gateway, emphasizing the Santa Fe Trail, the transportation of goods, and the movement of people through the Pecos River valley and the Sangre de Cristo Mountains. The relationship of the events at this site would be related to Civil War events that occurred at the park's Glorieta unit and to ranching activities that occurred on surrounding lands. All of the area's existing ranch buildings and structures, including the corrals, tack room, and barn, would be retained and used either for interpretation or for park administrative purposes.

Visitors would drive to Kozlowski's Stage Stop via NM 63 and a new 1-mile entrance road. A new parking area with spaces for 20 cars and 4 oversized vehicles would be constructed. Two spaces for visitors with disabilities would also be provided. A 0.25-mile trail would lead from the parking area to the stage stop buildings.

Original Santa Fe Trail ruts are still visible on the west side of NM 63. A 0.25-mile trail from the stage stop under the Glorieta Creek bridge would lead to a designated area where the ruts would be viewed and interpreted.

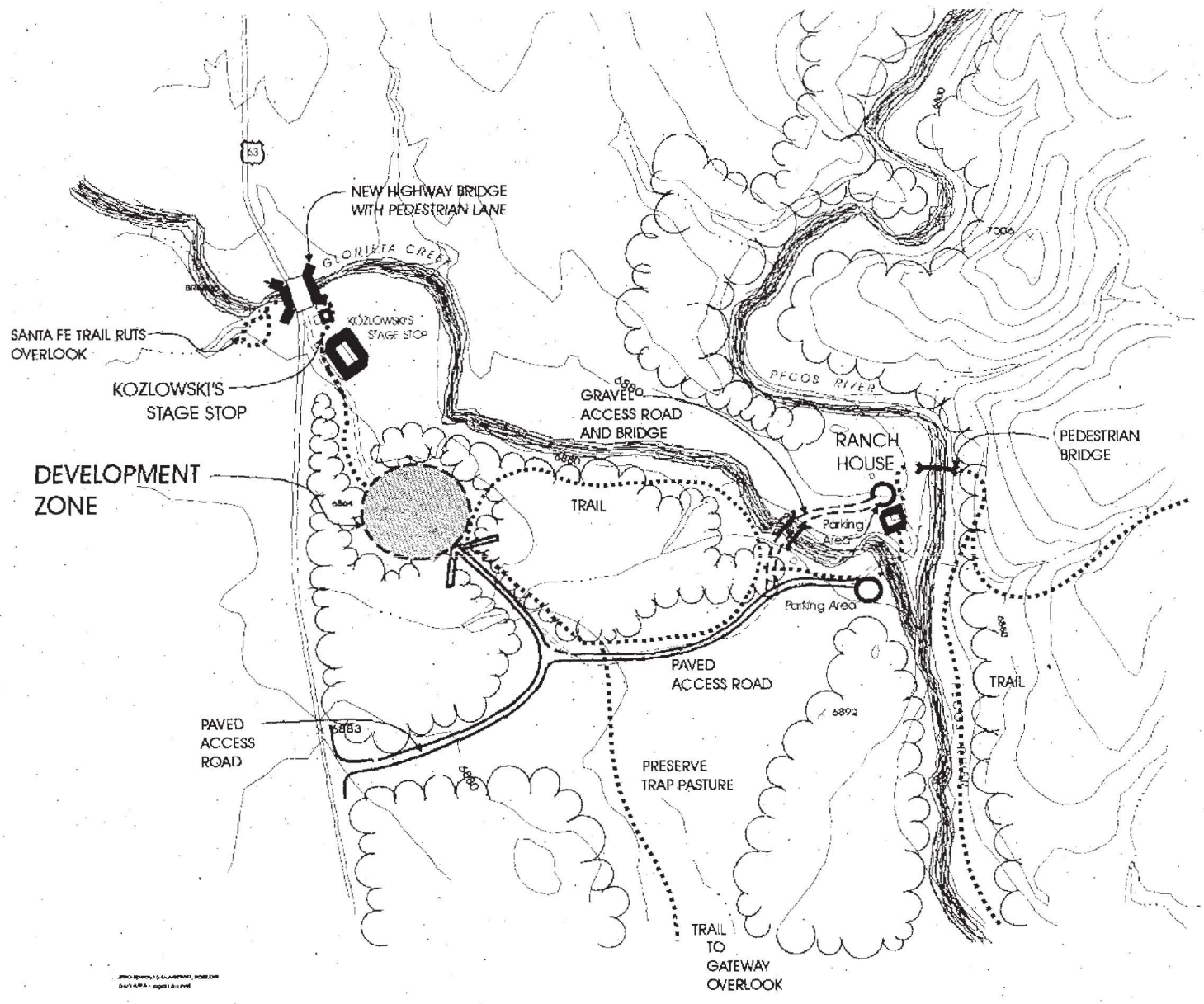


OVERVIEW: PECOS UNIT ALTERNATIVE D

The focus of Pecos unit alternative D would be to interpret the gateway and the historic travel patterns through Glorieta Pass. Visitors would be directed to a new entrance at the south end and a new visitor center at the Gateway overlook area (see Alternative D — Pecos Unit map). A broad interpretive overview would be provided at the new Gateway visitor center, as well as parking, orientation, and trails. Specific and more focused interpretation would be provided at Kozlowski's and at the Fogelson visitor center at the Pecos Pueblo / mission ruins complex. Kozlowski's would be adaptively used as an unstaffed interpretive facility. The existing Fogelson visitor center would be expanded for office space, and the parking capacity would be increased.

A new park administrative and operations facility would be developed between Kozlowski's and the ranch house. This complex would include offices, maintenance, and employee housing with associated parking and storage areas. The existing facilities near the Pecos Pueblo / mission ruins complex would be removed.

The ranch house would be used as a resource educational facility for schools and other groups, including the possibility for overnight use for special programs. Primitive trails would be provided east of the Pecos River.



Kozlowski's Stage Stop & Ranch House Area

DEVELOPMENT CONCEPT PLAN — ALTERNATIVE D

PECOS NATIONAL HISTORICAL PARK

Santa Fe and San Miguel County ✦ New Mexico

U.S. Department of the Interior / National Park Service

DSC / JUL 95 / 430 / 20032A

Gateway Overlook

Visitors would be directed to a new southern park entrance and would enter by way of a new 1-mile paved road off NM 63. A new, staffed 3,500-square-foot visitor center would be constructed at the Gateway overlook. A new parking area with spaces for 40 cars and 4 oversized vehicles would be constructed. Two spaces for visitors with disabilities would also be provided.

The new Gateway visitor center would provide a broad overview of the entire Pecos story. From the Gateway overlook visitors could see the ranch, the Pecos River, the Pecos Pueblo / mission ruins complex, the Santa Fe Trail route, and Glorieta Pass. The interpretive focus would be the sequence of events that comprise the continuum of Pecos National Historical Park. Here visitors would have opportunities to learn about the significance of the Glorieta unit to the park story and would be encouraged to visit that unit. A picnic area with 20 tables would be provided. All new visitor facilities would be out of view from other areas of the park. However, because of the proximity to such high visitor use, it is imperative that archeological sites near the Gateway overlook be thoroughly inventoried and evaluated for their national register significance, and that protective measures be developed. The Hispanic frontier sites might require archeological investigations, stabilization, and/or other "hardening" treatment because of their proximity to the visitor center.

The Colonias bridge would be repaired and modified for use as a footbridge. Trails from 0.25-mile to 10 miles would be developed from the Gateway overlook, across the river, and into the eastern portion of the park. Existing roads would be used to the greatest extent possible. A 1.5-mile interpretive trail would be developed along the ridges east of the Pecos River to the historic mill site near the ranch house. More research, including archeological investigations, would be needed for this site, and stabilization and other protective measures would be required.

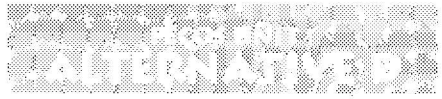
The presence of staffing in this area would make it feasible to offer guided tours to one or more Pueblo sites in the southern part of the Pecos unit.

Forked Lightning Ranch

The ranch house would be adaptively used for interpretation and resource education activities. The site would be maintained to reflect the ranching period to interpret this part of the continuum. Visitors to the ranch house would take a 1-mile gravel road to the vicinity of Glorieta Creek, where they would park in a 15-car, 2-oversized vehicle parking area and walk across the bridge to the ranch house. Administrative access to the ranch house would be the same as described under alternative C. The existing swinging footbridge across the Pecos River would be replaced with a safe footbridge, and a 0.5-mile interpretive trail would be developed from the ranch house to the historic mill area and the junction with the interpretive trail from the Gateway overlook. To provide visitors with an understanding of ranching and its effects on the landscape, the Park Service would actively preserve and maintain some of the resources associated with the ranching era. While a cultural landscape report would be needed to provide detailed guidance, preliminary analysis indicates that such ranching-related cultural landscape resources as additional pasture areas, corrals, stock tanks, and fences would be preserved under this alternative.

TABLE 1: COMPARISON OF THE PECOS UNIT ALTERNATIVES

GENERAL DESCRIPTION	ALTERNATIVE A (NO ACTION)	ALTERNATIVE B (PROPOSED ACTION)	ALTERNATIVE C	ALTERNATIVE D
Overview	Present use and management would continue. Primary interpretive focus would continue to be at the Pecos Pueblo / mission ruins complex. No new visitor facilities would be developed.	Two visitor staging areas would be developed — the Fogelson visitor center area and Kozlowski's Stage Stop. New visitor facilities would include trails, trailheads, and interpretive exhibits.	Three staging areas would be developed — the Fogelson visitor center, Kozlowski's Stage Stop, and the Gateway overlook. Staging areas and associated facilities would have easy vehicle access.	Visitors would enter the park from the south, and a new visitor center would be developed at the Gateway overlook area. Other visitor facilities would continue to be provided at Kozlowski's Stage Stop and the Fogelson visitor center.
Pecos Pueblo/Mission Ruins Complex	Existing visitor center would continue to serve as the only interpretive stop for visitors. There would be no expansion or modification of existing facilities. Existing administrative facilities would remain. New housing units would be constructed.	The Fogelson visitor center would be expanded to accommodate additional office space, storage, and parking. The picnic area and other minor elements would be relocated. The access road would be relocated away from ruins area. New trails would include a return loop from the ruins to the visitor center and to Kozlowski's. Existing administrative facilities would be removed. Cultural resource management would be out of view of the ruins area.	Same as alternative B.	Same as alternative B.
Forked Lightning Ranch	The ranch area would be used for park administration and operations. An existing ranch road would be upgraded to provide access from the northern boundary to the ranch house.	The ranch house would be adaptively used as a resource education facility. An administrative access road would be developed as in alternative A. Pastures would be preserved. A pedestrian bridge across the river would be developed to connect to trails east of the river.	The ranch house would be expanded and adapted for park administration and operations. A paved road and bridge over Glorieta Creek would be built for access to the ranch house. More pastures would be preserved under this alternative than under alternative B.	Same as alternative B except that access to the ranch house would be from a new paved road and bridge.



Park Administration and Operations

Most park administrative functions, including maintenance, would be relocated to a previously disturbed area between Kozlowski's Stage Stop and the main ranch house, which would be out of sight from visitor use areas. A 5,000-square-foot maintenance facility and a 10,300-square-foot administrative facility would be constructed (refer to Kozlowski's Stage Stop and Ranch Area — Alternative D map). This site would be centrally located with respect to visitor use sites in this alternative and would enable park staff to respond quickly to visitor and resource needs. The relocation of some interpretive exhibits from the Fogelson visitor center to the proposed Gateway overlook visitor center would leave sufficient space to provide for visitor center staff offices. An addition would be constructed to provide for collections storage and curatorial activities. The existing sewage treatment system would be enlarged and upgraded to meet increased demands that would be associated with this development.

The two recently removed trailers near the Pecos Pueblo / mission ruins complex would be replaced by two housing units totaling 2,300 square feet. The casita near the ranch house would also be used for employee housing. These facilities would be needed to ensure a high level of security for park facilities and resources.

TABLE 1: COMPARISON OF THE PECOS UNIT ALTERNATIVES (CONTINUED)

GENERAL DESCRIPTION	ALTERNATIVE A (NO ACTION)	ALTERNATIVE B (PROPOSED ACTION)	ALTERNATIVE C	ALTERNATIVE D
Kozlowski's Stage Stop	No interpretive or visitor facilities would be developed. The existing structures would continue to be used for park administration and operations. An access road would be developed along an existing ranch road.	The stage stop vicinity would be adapted for visitor contact and exhibits. A new entrance road to the staging area, ranch, overlook, and river would be developed. The stage stop would be adaptively used as a staffed interpretive facility. A comfort station, parking area, trailhead, and trails would be developed.	Visitor facilities would be the same as under alternative B. However, a new maintenance facility would be developed near the stage stop.	Same as alternative B except the stage stop would be adaptively used as an unstaffed interpretive facility.
Gateway Overlook	No development.	A comfort station, interpretive exhibits, and picnic area would be developed. A pedestrian bridge would be developed at the Colonias bridge foundations to provide access to trails east of the river.	A comfort station, interpretive exhibits, and a picnic area would be developed. Vehicle access from the stage stop area and a parking area would be provided. A pedestrian bridge would be developed at the Colonias bridge foundations to provide access to trails east of the river.	A new southern park entrance would be developed. A new visitor center at the Gateway overlook would be built. New facilities would include parking, a trailhead, and a pedestrian bridge to connect with the trails east of river.
Park Administration and Operations	The ranch house would be adaptively used for park headquarters. A maintenance building would be located near Kozlowski's. The casita would be adaptively used for park housing. New housing would replace recently removed housing near the ruins.	New administrative facilities, including office space, maintenance, storage, parking, and park housing, would be developed at the northern boundary.	The ranch house would be adaptively used. A new maintenance facility would be built near the stage stop. Park housing would be provided at the casita and the ruins.	A new facility would be located near the stage stop, including office space, maintenance, storage, and parking.
Resource Education	None.	The ranch house would be adaptively used for resource education. Access would be along an existing ranch road from the northern boundary.	A new facility with parking would be developed at the northern boundary site.	Same as alternative B except a new gravel access road would be developed with a new bridge over Glorieta Creek.

TABLE 1: COMPARISON OF THE PECOS UNIT ALTERNATIVES (CONTINUED)

GENERAL DESCRIPTION	ALTERNATIVE A (NO ACTION)	ALTERNATIVE B (PROPOSED ACTION)	ALTERNATIVE C	ALTERNATIVE D
Trails	No new trails.	A trail network would be developed east of the Pecos River.	Same as alternative B.	Same as alternative B.
Development Cost*	$3,269,700	$9,883,200	$10,078,900	$12,492,600
Staffing Cost**	$1,165,646	$1,766,205	$1,942,825	$2,234,249

*Total cost based on gross cost and advance and project planning costs (figures are rounded; see appendix E)
**A breakdown of staffing costs are presented in appendix D

GLORIETA UNIT
ALTERNATIVE 1

GLORIETA UNIT ALTERNATIVES

ALTERNATIVE 1 (NO ACTION)

Pigeon's Ranch

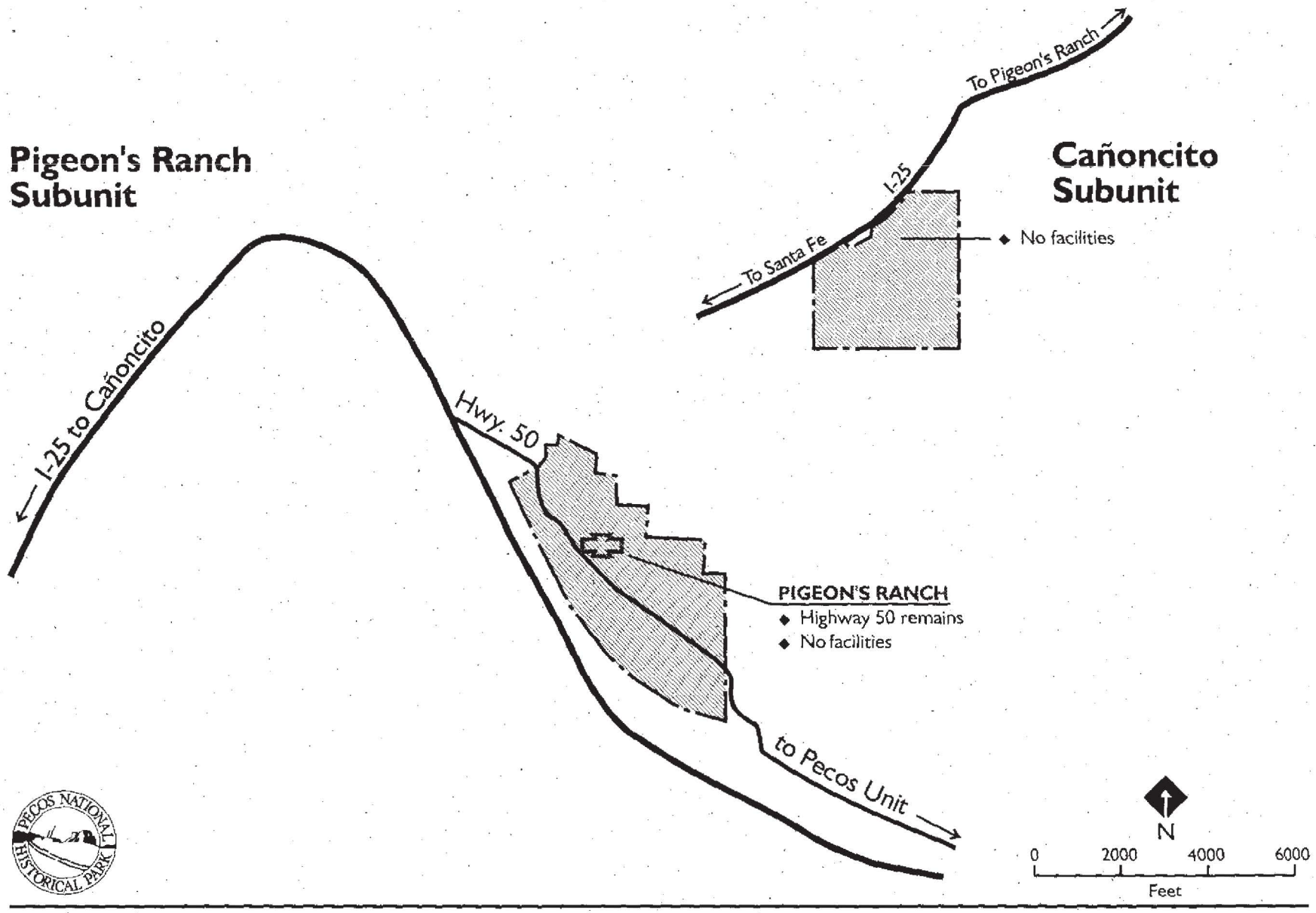
In this alternative for the Glorieta unit, NM 50 would continue to pass through the center of Pigeon's Ranch, and visitors would not be encouraged to stop there. Pigeon's Ranch would continue to be interpreted at the Fogelson visitor center.

Cañoncito

No public access or facilities would be provided.

OVERVIEW: GLORIETA UNIT ALTERNATIVE 1 (NO ACTION)

No new facilities would be developed at Pigeon's Ranch or Cañoncito under this alternative (see Alternative 1 – Glorieta Unit map). NM 50 would continue to bisect Pigeon's Ranch. The Fogelson visitor center would continue to provide interpretation of Pigeon's Ranch.



Glorieta Unit

ALTERNATIVE 1 (NO ACTION)

PECOS NATIONAL HISTORICAL PARK

Santa Fe and San Miguel County ◆ New Mexico

U.S. Department of the Interior / National Park Service

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Park Feature

Boundary

ALTERNATIVE 2 (PROPOSED ACTION)

Pigeon's Ranch

The primary objectives under the proposed action for the Glorieta unit would be to preserve the cultural landscape and interpret the Civil War battle that took place in the area. To accomplish these objectives a core battlefield zone was identified during the planning process. The zone was determined through a viewshed analysis and cultural landscape analysis in the field from the key vantage points used during the battle. The vantage points are presently known as Sharpshooter's Ridge, Windmill Hill, and Artillery Hill. While preserving the entire historic landscape and archeological resources in the park would be important, the core battlefield zone would serve as the primary area to interpret the battle. As much as is feasible, structures and other features that were not present during the time of the battle would be removed. The landscape and structures that were present at the time of the battle would be stabilized and preserved in a way that would prevent the disturbance of archeological resources.

Contemporary facilities would be developed outside of this zone to accommodate visitor access and provide opportunities for visitors to understand the area's history. However, sensitive site selection would minimize intrusions of these facilities on archeological sites and the rest of the historic scene.

The Federal Highway Administration and New Mexico Highway Department are investigating the possibility of rerouting NM 50 by way of a new interchange with I-25 southeast of the Pigeon's Ranch area. If NM 50 was relocated out of the Glorieta unit, the site would be developed for visitor use and interpretation. The public acquisition of all the properties in the Glorieta unit would need to occur before full development or public access and closure of the road to through-traffic would be implemented. In addition, reasonable alternative access would have to be available to those landowners outside the unit that are presently served by the access easement near the Pigeon's Ranch structure.

The existing paved road would end at a 20-car, 4-oversized vehicle parking area near the east boundary of the unit. A staffed contact station incorporated in an existing structure would provide orientation to the site and would interpret the battle of Glorieta and its role in the Civil War. The site's relationship to the other park units would also be explained. Restrooms would be provided at the parking area.

The remainder of the road through the unit would be reduced in width and returned to a gravel surface for foot travel to reflect the historic experience of travel on the Santa Fe Trail.

The Pigeon's Ranch structure would be stabilized and interpreted from the outside. A 3-mile loop trail would be constructed to interpret the battlefield landmarks, such as Sharpshooter's Ridge, Windmill Hill, and Artillery Hill, to help visitors visualize the scene and events that took place during the battle. Additional research would be needed to identify any other Glorieta battlefield features that would need to be preserved and interpreted as part of the Santa Fe Trail scene or the Civil War battle. The trails in this unit would be linked with the new Santa Fe trail when it is developed. The location of the trail link would be identified during the planning Research would also be needed to identify other historic features requiring national register evaluation.

GLORIETA UNIT
ALTERNATIVE 2

OVERVIEW: GLORIETA UNIT ALTERNATIVE 2 (PROPOSED ACTION)

The Glorieta unit would have a visitor contact facility in an existing structure, an interpretive exhibit and trails near Pigeon's Ranch, and a pullout at Cañoncito to interpret the Civil War battle (see Alternative 2 — Glorieta Unit map).

ALTERNATIVE 2

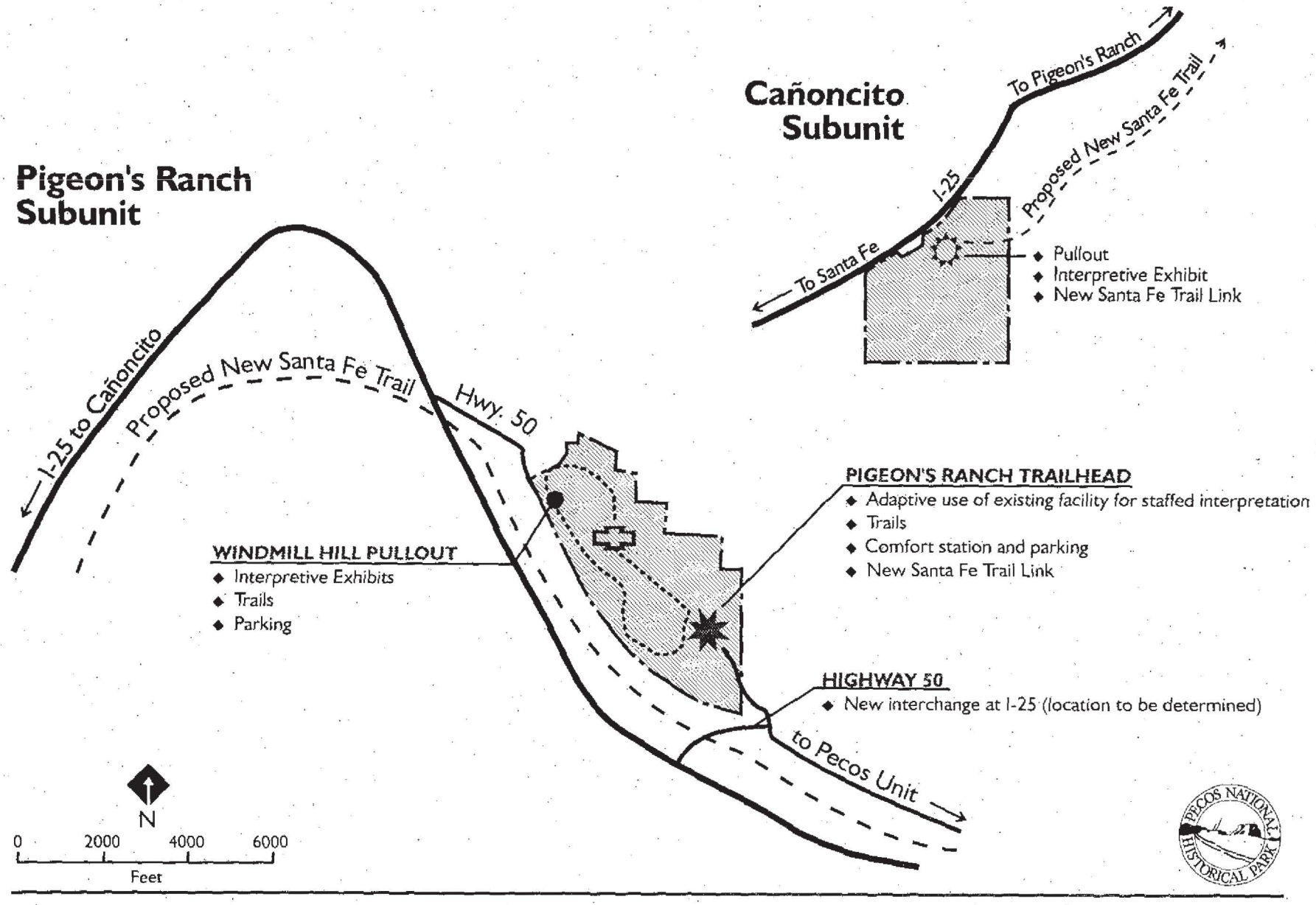
Before removing the road and stabilizing the structure or adding visitor facilities, further archeological and architectural investigations would be conducted to aid in defining archeological remains that relate to the ranch and the Battle of Glorieta Pass.

A small pullout would be developed near Windmill Hill at an existing disturbed site to provide access from the west. Here, a short trail would lead to a panoramic view of the battlefield, which would be accompanied by an interpretive exhibit. The trail would continue to the top of Windmill Hill for another panoramic view and the further interpretation of the strategic use of the hill during the battle. This interpretive stop would provide visitors with the story of the battle from a perspective of Confederate troops moving through the area from the west.

If NM 50 was not relocated, an unstaffed interpretive kiosk and a 1.1-mile trail north of the road to Sharpshooter's Ridge would be built. The Pigeon's Ranch structure would continue to be stabilized.

Cañoncito

Because Cañoncito would be best interpreted from an overlook, an interpretive exhibit with spaces for 10 cars and 4 oversized vehicles would be developed off the access road from I-25. Interpretation would explain the Civil War battle events that occurred at and near this site and the relationship of this unit to other areas in the park. The National Park Service would work cooperatively with the Forest Service and the Conservation Fund to develop an overlook trail to the top of the mesa. The new Santa Fe trail would be linked with the interpretive overlook when it is developed.



Glorieta Unit

ALTERNATIVE 2 (PROPOSED ACTION)

PECOS NATIONAL HISTORICAL PARK

Santa Fe and San Miguel County ◆ New Mexico

U.S. Department of the Interior / National Park Service

DSC / JUL 95 / 430 / 20036A

GLORIETA UNIT
ALTERNATIVE 3

OVERVIEW: GLORIETA UNIT ALTERNATIVE 3

The Glorieta unit would have a visitor contact facility in a new structure, an interpretive exhibit and trails near Pigeon's Ranch, and an interpretive exhibit at Cañoncito to interpret the Civil War battle (see Alternative 3 – Glorieta Unit map).

ALTERNATIVE 3

Pigeon's Ranch

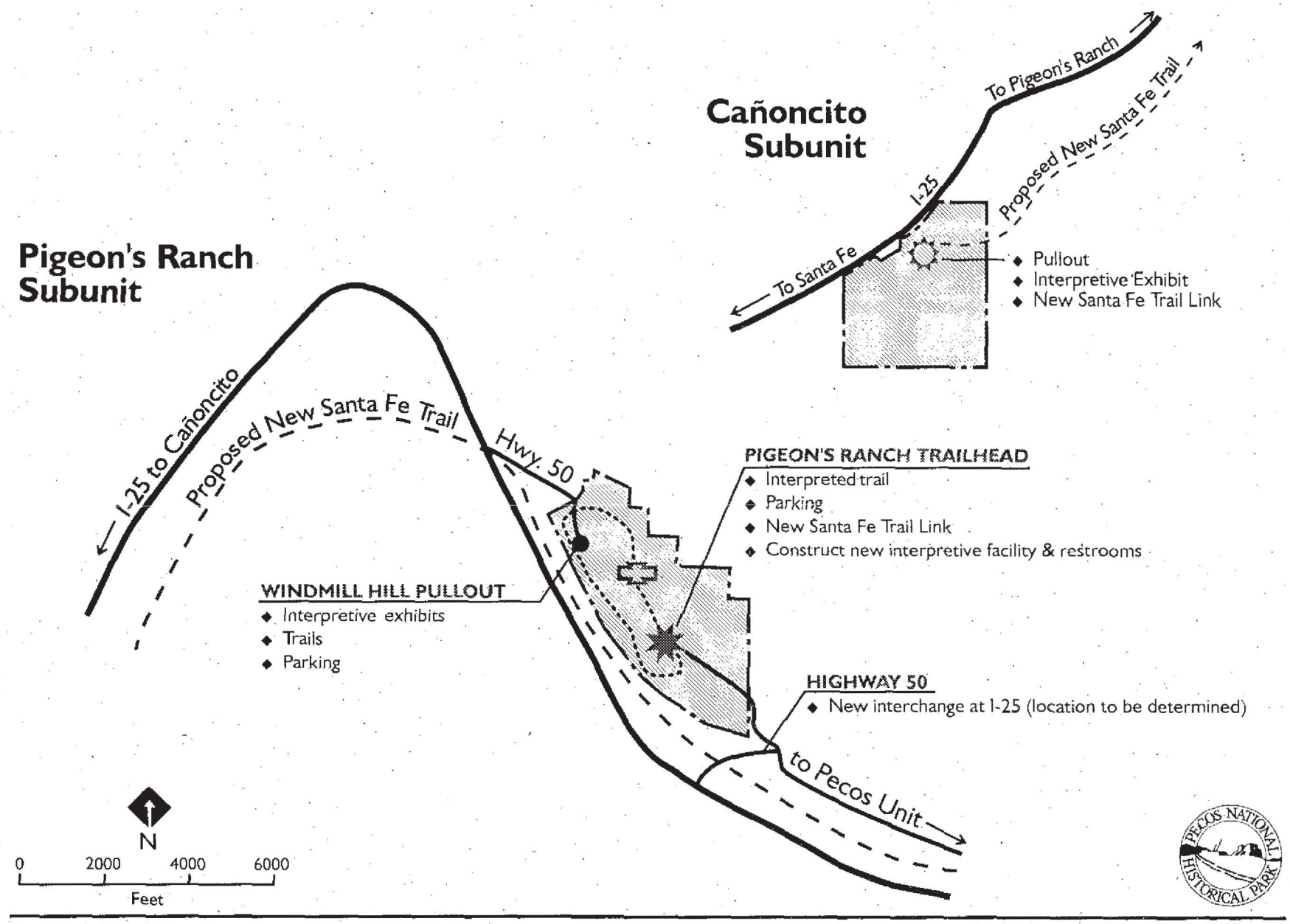
As in the proposed action the core battlefield would serve as a basis for interpreting the historic landscape of the area. Visitor facilities would be developed outside this zone. In this alternative a contact station would be developed on the edge of the core zone, linking the visitor staging area closer to the historic resources. The contact facility and a parking area for 20 cars and 4 oversized vehicles would be near an existing residence. A new building with exhibit space and restrooms would be constructed. Existing water and sewer systems would be upgraded to meet the demands of projected visitation to the area. A short 0.25-mile trail along the NM 50 corridor would lead visitors to the adobe structure. From there visitors could take longer walks to other features as in the proposed action. A pullout on the west side would also be developed as described in the proposed action. A new Santa Fe trail link would be identified during the planning phases of the new trail.

Cañoncito

As in the proposed action an interpretive exhibit with spaces for 10 cars and 4 oversized vehicles would be developed off the access road from I-25. Interpretation would explain the Civil War battle events that occurred at and near this site and the relationship of this unit to the other areas in the park. The National Park Service would work cooperatively with the Forest Service and the Conservation Fund to develop an overlook trail to the top of the mesa.

TABLE 2: COMPARISON OF THE GLORIETA UNIT ALTERNATIVES

	ALTERNATIVE 1 (NO ACTION)	ALTERNATIVE 2 (PROPOSED ACTION)	ALTERNATIVE 3
Pigeon's Ranch	Visitors would not be encouraged to stop. NM 50 would remain.	NM 50 would be rerouted outside park boundaries. A comfort station would be developed. An existing building would be adaptively used as a visitor contact facility with interpretive exhibits. Parking and trails would be provided. The Pigeon's Ranch structure would be stabilized.	Same visitor facilities as in alternative B. However, a new visitor contact building would be constructed at a previously disturbed area closer to the Pigeon's Ranch structure.
Cañoncito	No development.	An interpretive exhibit and overlook would be developed.	Same as alternative B.
Development Costs	$0	$958,600	$1,298,500
NOTE: Staffing costs: Separate costs were not developed specifically for this unit. These are identified in the Pecos unit alternatives.			



Pedestrian Trail ----------

Proposed New Santa Fe Trail — — —

Overlook

Visitor Facilities

Park Feature

Boundary

Glorieta Unit

ALTERNATIVE 3

PECOS NATIONAL HISTORICAL PARK

Santa Fe and San Miguel County ◆ New Mexico

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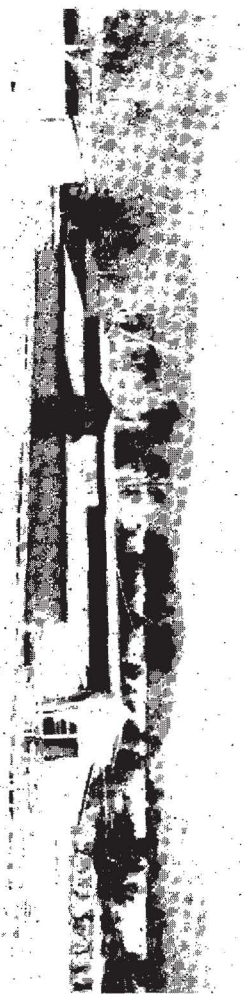


AFFECTED ENVIRONMENT

CULTURAL ENVIRONMENT . . . . .

HISTORICAL OVERVIEW

Prehistory

Archeological sites in northeastern New Mexico reflect at least 10,000 years of human history, beginning with the earliest Paleo-Indian groups who are known to have hunted large game in the region. As the climate became warmer and drier, the large Pleistocene animals became extinct, and the Pecos area began to be used sporadically by small, highly mobile, kin-based Archaic groups. These groups moved from place to place seasonally, hunting and gathering. Their survival depended on expert knowledge of the location, availability, and growth cycles of local resources and ecological zones. These groups left only modest traces on the Pecos landscape, including scattered camps, kill sites, food-processing areas, and lithic procurement sites.

As human populations increased and adapted to a more sedentary lifestyle, inhabitants began to build small pithouse villages in forested mountain settings and began to grow maize. The first known pithouse village in the Pecos vicinity, built near Glorieta Creek, was occupied between ca. A.D. 800–850. During the next five centuries population increases were accompanied by technological and cultural development, including the production of ceramics and the growth of religious and social groups.

Family groups had built numerous small structures in the upper Pecos River valley by the A.D. 1100s. By A.D. 1200 these groups had begun to concentrate into larger, coursed adobe, one-story dwellings, and within a century major communities were established in the Pecos River valley. By the mid 1400s all of the valley's pueblos except Pecos were unoccupied. Pecos Pueblo had a population of around 2,000 by 1541 and had become a regional power, thriving on the strong and stable trade between Plains and Puebloan people.

Early Historic Period

It is possible that population increases, coupled with drought and politics, may have strongly influenced the consolidation of Puebloan groups in the centuries before 1540. The consolidation of settlements at Pecos Pueblo may also have been due to pressure from enemy groups. Teya Indians (possibly Caddoan-speaking Plains groups) tried to conquer Pecos Pueblo in about 1525. Following their failure, the Teyas were received as friends who were allowed to trade and camp just outside the walls of the pueblo. The result of this consolidation was the creation of a powerful stronghold. By the time the Spaniards began exploring the region, the Pecos Indians had raised an almost fortress-like pueblo strategically located to overlook the Pecos River valley.

Spanish Exploration and Colonial Period

Pecos Pueblo's first contact with Euro-Americans occurred during the summer of 1540 when a contingent of Pecos Indians met with Francisco Vasquez de Coronado's expeditionary force at Hawikuh. Seeking provisions for their trek onto the plains, Coronado and his group visited Pecos Pueblo. When the Spaniards returned to Mexico in 1542, they left one of their friars behind, hoping to convert the Indians of Pecos to Christianity.

The discovery of minerals in Chihuahua and the desire to Christianize the Indians accelerated the northward movement of the Spanish into previously unoccupied lands during the late 1500s. These forays included the 1581 Rodriguez-Chamuscado entrada and the unauthorized expeditions of Antonio de Espejo (1583), Gaspar Castaño de Sosa (1591), and Gutierrez de Humana shortly before the beginning of the 17th century. In 1595 Juan de Oñate acquired the right to conquer, pacify, and administer areas of New Mexico and began permanent Spanish settlement in 1598.

Following the direction of the king of Spain, the Spanish began to create a colony in the region and establish missions. Major expenditures of human effort and materials went into constructing mission facilities. Establishment of the Franciscan Mission of Nuestra Señora de los Ángeles de Porciúncula at Pecos in the early 1600s soon began to cause major changes in the lives of pueblo residents.

The Pecos Indians joined the Pueblo revolt of 1680–92 and destroyed the church. In 1693 the Spanish reestablished the mission at the pueblo; a lesser revolt involved Pecos Indians in 1696. Under the supervision of the Spaniards, the Indians built yet another mission church at Pecos by 1707.

During the 1700s Pecos Pueblo represented the eastern frontier outpost of Spanish colonialism. The pueblo functioned as a base of military activities on the plains and was the key pueblo in the defense of Spanish settlements along the Rio Grande. The strategic importance of the pueblo is reflected in the construction of the guardhouse kivas and possibly earthworks. After 1786 Pecos Pueblo continued to be of strategic importance as a port of entry to the Spanish provincial capital of Santa Fe and as a point of departure for military-related expeditions to the plains. This easternmost frontier outpost was a guardian of the main access to Santa Fe by way of the plains. Throughout the 18th century the Pecos population declined. Conflicts over secular and religious leadership brought about disorganization in the community.

Disease, drought, and attacks from Plains Indians plagued both the Spanish and the Pecos Indians. At mid-century, Comanche raids forced the Pecos Indians to abandon their irrigated fields along the Pecos River northeast of the pueblo, as well as arable land, which was dependent on rain. They were no longer able to bring water from the river and had to rely on wells. Wood cutting also became a problem, as did feed for their horses and other livestock. The last priest to the Pecos had left by 1820.

During the late 1700s and early 1800s the Spanish governor of New Mexico provided for the expanding non-Indian population by making land grants of unappropriated domain. Initially Spanish land grant boundaries — such as Los Trigos between Pecos Pueblo and San Miguel Del Vado — respected Indian lands. Four square leagues of land were surveyed as the Pecos grant in 1818, leaving surrounding lands open for development. The best lands along the river were soon claimed by the Hispanic settlers, who maintained that the land was unappropriated, untilled, and unimproved. La Placita near the Pecos River was an example of Hispanic agriculture and settlement during the early 1800s.

Traditionally both the historic Pecos Indians and the Hispanic inhabitants divided grant lands into three general types — villages with individual house plots, irrigated farm lands, and uncultivated and unfenced forest and grazing lands held in common for all. Livestock, especially sheep, goats, and some horses, were herded to keep them out of the fields and were moved seasonally between shared summer and winter ranges.

Gradually Hispanic settlers moved onto Pecos Pueblo grant lands. By 1838 the few remaining Pecos Indians had left their pueblo in the hands of a caretaker and went to live at the Pueblo of Jemez.

During the next century a series of legal actions sought to define the ownership of the Pecos grant, and the lands were sold repeatedly without clear title. Absentee owners from the east exploited the area's grazing lands and timber; Hispanic settlers continued to use the area for wood cutting, pasturing livestock, and agriculture. The Pecos were legally merged into the Pueblo of Jemez by an act of Congress in 1936, and the Pecos culture still survives at Jemez through linguistic and cultural connections.

Santa Fe Trail Period

For nearly a century Pecos Pueblo was sanctioned by the Spanish government as an authorized trading point for people and goods from the east — a practice established before the Spanish presence. Steady population growth in the east resulted in an increase of products from that area. The Spanish government realized that importations were undermining the already struggling domestic trade with Mexico City. In the early 1700s the Spanish government made an effort to shift the economic dependence to Mexico City by declaring it illegal for foreign traders to conduct their business in New Mexico, thereby shutting down the ancient trade route from the east.

Some traders ignored the moratorium. Beginning as early as the 1730s, French traders attempted to bring goods to Spanish colonists. But the effort was effectively suppressed by local leaders in office who extorted greater and greater sums of money to look the other way and punished those who refused. The American Revolution, Louisiana Purchase

and the growing independence of Spanish colonies from Mexico helped set the stage for increased trade between eastern markets and settlers along the Rio Grande.

In 1821 William Becknell led a pack train from Missouri to Santa Fe, stopping at the new settlement of San Miguel, which served as the valley's main trading center and port of entry into Mexico. Becknell negotiated an agreement with the Spanish governor to reopen the trade route, and the Santa Fe Trail was officially named. Unfortunately unrestricted trade via the Santa Fe Trail came too late to have much of a beneficial effect on the Pecos economy. By the time Becnell arrived in the area, the majority of the Pecos had been killed by disease or warfare or had moved to adjoining areas such as San Miguel. Until the early 1830s those Indians remaining at Pecos offered hospitality to occasional travelers using the trail.

The Santa Fe trade was briefly interrupted by the Mexican-American War in 1846. American troops passed through Glorieta Pass on the Santa Fe Trail during the war that resulted in the addition of New Mexico and other parts of the frontier to the United States.

At first, small merchants purchased goods and transported them along the trail independently. Later came large, organized companies with long wagon trains doing business as common carriers. As the trade grew, so did way stations such as the Pigeon's Ranch complex and Kozlowski's Stage Stop.

Civil War Battle of Glorieta Pass

In 1862 Confederate forces from Texas had successfully moved up the Rio Grande valley to Santa Fe and were poised to head up the Santa Fe Trail to capture military stores at Fort Union. The plan was then to take control of the Colorado goldfields and then move west to the seaports in California.

The first encounter between Confederate and Union forces was fought somewhere east of Johnson's Ranch on March 26, 1862, and was followed by indecisive but heavy fighting at Pigeon's Ranch on March 28. During this time Confederate supply wagons, together with horses and mules, canons, and tents, were at Johnson's Ranch. Major Chivington led Union troops around the Confederate flank at Pigeon's Ranch and across the mountainous terrain to the bluff above Johnson's Ranch. The Union forces burned the wagons and supplies and slaughtered the livestock. Loss of all their supplies and means of transportation forced the Confederates to retreat from New Mexico, ending the Civil War in the West.

Union troops used the Santa Fe Trail and facilities near Pecos for more than two months during and after the battle. The old mission church at Pecos Pueblo was also used to house the wounded, and some soldiers were purportedly buried nearby.

Ranching Period

Between the 1870s and 1920s Pecos Pueblo and Los Trigos grant lands were occupied by Hispanic ranchers and farmers who depended on the land for their livelihood and used it in the traditional Hispanic pattern. Tex Austin acquired ranchland in the Pecos Pueblo grant and developed the Forked Lightning Ranch, a dude ranch that replaced the traditional ranching activities.

Former grant lands were owned and managed by one large corporate entity rather than individual small farmers and herders using lands in common. Open ranges were divided, fenced, and gated. Purebred beef cattle replaced sheep, and piñon and juniper stands were cleared to provide more grazing for cattle. Common access to the river was cut off, earthen stock tanks were excavated, and large physical facilities for managing cattle — corrals, loading and branding pens, chutes, shop, tack rooms, etc. — were built at Kozlowski's east and south of the main building and in the outer pastures.

As New Mexico began to recognize and promote its scenic and historic features to tourists, dude ranches became popular. Dude ranches reflected an attempt to cash in on the easterners' romantic notion of the rugged strength and simplicity of the "Old West" frontier and were vigorously promoted by the railroads. Austin's Forked Lightning Ranch took advantage of this interest and promoted itself as an easy destination for easterners — it was only 2 miles from the railroad station at Rowe. It was designed to provide quarters for guests in a rustic southwestern style. Activities included golf, polo, fishing, hunting, horseback riding, picnicking, camping, hikes through the old orchard near the river, pack and chuck wagon trips, tennis, croquet, dancing, and motor trips to Santa Fe and the Indian pueblos, including the now deserted Pecos Pueblo.

Austin hired Santa Fe architect John Gaw Meem to design the main ranch house in a Mexican hacienda style. The house was completed in 1925 and served as the focal point of the exclusive dude ranch retreat for wealthy easterners. The trading post functioned as the ranch's business office and ranch foreman's residence until the phasing out of cattle sales and shipments in 1991.

Austin operated the Forked Lightning Ranch for seven years, then lost it in bankruptcy in 1933. W. C. Currier bought the ranch from its creditors and later sold it to Texas oilman E. E. "Buddy" Fogelson in 1939. In 1949 Fogelson married actress Greer Garson, and the ranch became a summer home until Mr. Fogelson's death in 1987. Greer Garson sold the ranch to the R. K. Mellon Foundation, which donated it to the National Park Service in 1993. The predominant "Texas" pattern of land use, a tradition since the 1920s, is reflected in the ranchland's present cultural landscape.

EXCEPTIONAL CULTURAL RESOURCES

Glorieta Pass (Gateway Views and Connections)

For centuries the Pecos River valley has been a gateway, strategically located between the high plains and the Rio Grande valley. High mountain ranges form a 360° backdrop around the Pecos River valley's mesas and rolling plains. To the east the magnificent 13,000-foot-high headwall of New Mexico's Sangre de Cristo Range provides both visual and physiographic relief and defines the western edge of the Great Plains. To the west the stark, formidable barrier of Glorieta Mesa is bisected by the gentle contours of Glorieta Pass, allowing access westward into the Rio Grande valley.

The topography of this area formed a natural transportation route linking the Great Plains and the Rio Grande valley. This centuries-old route wound southwest along the southern flanks of the Sangre de Cristo Range to reach the Pecos River valley near the Pecos Pueblo. From Pecos the trail climbed over Glorieta Pass before dropping down through Apache Canyon into the Rio Grande drainage. At its center the great pueblo of Pecos became a cultural crossroads where peoples from the high plains, mountains, river basins, and deserts of the Southwest met and interacted.

Pueblo Indians followed this route when they went buffalo hunting on the plains and Pueblo and Plains Indian tribes met at Pecos to wage war or to barter. Spanish explorers, buffalo hunters, and traders used the pass as a portal through the mountains and visited the frontier outpost at the Pecos Pueblo. Hispanic settlers came to the Pecos River valley via this route. St. Louis caravan traders followed the Santa Fe Trail by Pecos Pueblo and over Glorieta Pass. The trail not only provided access for Civil War armies, but areas like Glorieta and Pigeon's Ranch were the setting for one of the war's most important battles in the Southwest, when Texas and Colorado volunteers fought at the gateway's center. Although the transcontinental railroad and modern highways later replaced the original trail, the route still serves as a crucial link between the plains, the Rio Grande valley, and the Southwest.

Pueblo Development

For more than 10 centuries the upper Pecos River valley was a meeting place for many different cultural groups who left behind their belongings, villages, and fields. The most visible and well known of these sites are the pueblo ruins dating from A.D. 1300 to the late 1700s. The ruins and their contents bear witness to dramatic changes in the Puebloan world — the dependence on agriculture, the establishment of community life, status as a renowned trade center, and the influence of European contact and colonization.

The park's pueblo ruins include the 150-room Forked Lightning Pueblo, which may have been the immediate predecessor to the great Pecos Pueblo, and several other nearby structural ruins. Loma Lothrop Pueblo may have been contemporaneous with the later occupation of Forked Lightning. South Pueblo was begun as a series of small roomblocks during the 1300s and later was enlarged into a terraced village of 200 to 300 rooms. Several large pueblo sites in the area but outside park boundaries date to about the same time period (just prior to the occupation of Pecos Pueblo).

By about 1450 the Towa-speaking Puebloans had left most of their Pecos River valley villages and were concentrated in the monumental new pueblo known today as Pecos Pueblo. Constructed atop the north end of a mesilla (small mesa) overlooking the Pecos and Glorieta river drainages, this huge apartment building consisted of four separate multistory houseblocks in the form of a giant rectangle around a spacious 2-acre plaza. It appears to have been planned as a single defensible unit, with annexes added at a later time. The compact, terraced masonry pueblo may have had from 600 to 700 rooms. Pecos Pueblo was the largest community documented in the Rio Grande region at the time of Euro-American contact and consisted of residential, ceremonial, and possibly public architecture. Pecos Pueblo is unique both for its architectural features and its role as a defensive frontier trading post.

An extraordinary amount of natural resources, human energy, architectural and planning skills, and social organization were involved in the construction of Pecos, as well as the adjoining villages. The architectural remains of these villages hold an untold wealth of information about the past.

Spanish Colonial Sites

More than two centuries of Spanish influence at Pecos resulted in the construction of a series of mission churches and secular buildings. These efforts reflect the strong interest Spain took in both missionary activities and economic exploitation. They were intensified at Pecos Pueblo because of its size, richness, and the opportunity it gave the Spanish to reach beyond the Rio Grande into the plains. The Franciscan church mission at Pecos was attractive because of the potential number of souls to be saved. After the Spanish presence was established at Pecos and before California missions were built, Pecos also represented the westernmost frontier outpost of Catholicism in the New World. To a large degree Pecos was the focal point of church/state conflict in New Mexico, and the pueblo inhabitants bore the brunt of a labor and goods extractive system.

The first of the mission construction efforts is known today as "Lost Church" and may represent the first such structure in New Mexico. Little is known about the history of this church, located northeast of the Pecos Pueblo / mission ruins complex. It is not mentioned in those Spanish records that have been researched. It is believed, however, to have been used as a temporary chapel during the construction of the mission complex.

The mission ruins stand today as an extensive complex of structures and archeological remains dating from the 1500s through the late 1700s. Occupants witnessed the erection and use of the three churches and two conventos at the site where the partially standing 18th century church and convento ruins remain.

The earliest church on the site, the second church of Pecos, was discovered archeologically in 1967 and is represented only by its foundations, which are visible beyond the walls of the present church. The structure was built of coursed, mold-made black adobe and was plastered white. The church was supported on massive rubble-filled foundations faced with random masonry elements. This edifice was reportedly the second largest church north of Mexico and was described as a most splendid temple of singular construction and excellence. The complex also had several other

features, including a cemetery, a porter's lodge, a corral, and a garth. The large convento and cloister attached to the church on the south were continuously enlarged and rebuilt until the 1680 revolt, when the church was destroyed.

The next church on the site, the third church of Pecos, was a temporary chapel constructed ca. 1694–99, during the reoccupation of the area following the Pueblo revolt. It was in use until around 1706. Although no archeological evidence of this building has been found, knowledge of it was acquired through historical documents.

The mission of Nuestra Señora de Los Ángeles Porciúncula (the fourth church of Pecos) was built in the early 1700s and presently dominates the mesilla. The existing church structure has been badly damaged by vandalism, visitor traffic, and natural processes such as rain, vegetation, and seasonal changes in temperatures during the 19th century. The church was archeologically excavated in 1915 and has undergone a variety of stabilization and research projects.

The large 17th and 18th century churches are singularly significant. The 17th century church, one of the largest churches in the province, was built in the style of a 16th century Mexican fortress. The 18th century church was smaller; however, it was the largest in New Mexico during this period and had distinct architectural characteristics.

The remains of these churches occupy a portion of the mesilla just south of South Pueblo. Foundations of the second church of Pecos are visible beneath the standing walls of the fourth church, along with stabilized ruins of the convento, porter's lodge, corral, ramada, torreon, and a kiva.

Lost Church and the remains of the mission buildings form a physically unique and culturally representative sample of Spanish religious and secular architecture. Because so few examples of colonial secular structures are known, their number and their presence at Pecos adds to the park's significance.

Spanish Colonial and Hispanic Homesteads

Secular components of early Spanish colonization of the Pecos area likely centered around the construction and use of the mission churches as indicated by the proximity of such structures as Casa Real, Presidio, Square Ruin, and the "ancient walled area" to the church/convento sites. Some of these compounds were left unoccupied after the Pueblo Revolt of 1680 and are among the very few known sites dating to this time period.

The La Placita archeological site is situated along the Pecos River in the southern portion of the park. This Hispanic frontier site, dating from perhaps 1815 to 1820, is a type of site that is extremely rare in the Southwest and offers an unparalleled opportunity to understand some of the impacts that the last years of Spanish rule had on populations in New Spain.

Below the Forked Lightning ranch house is a grist mill that may date as early as the 1860s. It was operated by Anglos in the early 20th century until it was dismantled by Austin in 1925.

Santa Fe Trail

The Santa Fe Trail corridor connects most of the primary cultural resource features of the park both historically and physically. The main trail lies outside of the park boundaries; however, many travelers used a spur trail to the village of Pecos and passed by the mission, Kozlowski's Stage Stop, and Pigeon's Ranch. The nearby town of Glorieta was founded in 1839 by railroad construction workers employed by the Atlantic-Pacific Railroad. The railroad paralleled the Santa Fe Trail from Missouri to New Mexico. This was the beginning of the end for the Santa Fe trade via the trail. Its demise was complete when the railroad, now owned by the Atchison, Topeka, and Santa Fe Railroad, became fully operational in the 1880s and replaced the trail as the predominant link with industries in the east.

Martin Kozlowski, a Polish immigrant, settled at Pecos by 1858. He established a Santa Fe Trail way station and hostel near the spring that flowed into Glorieta Creek. Remnants of Kozlowski's trading post are encompassed in the present structure; however, the number and type of outbuildings that originally composed the establishment is unknown. *Kozlowski would have almost certainly had living quarters for his family, cabins or rooms for travelers, and a tavern.* Separate structures would have been needed for storing grain and stabling and corralling livestock. Kozlowski considered the Pecos church his property, so he tore down its beams and used its adobe for building purposes. His original way station was added onto and remodeled for more than a century. The existing building is a national historic landmark.

Pigeon's Ranch was centrally located at the midpoint of Glorieta Pass, bounded by Glorieta Creek on the south, and the steep rocky hillsides on the north. This establishment, owned and managed by George Hebert, competed with Kozlowski's Stage Stop for Santa Fe Trail business. Pigeon's Ranch was composed of a number of adobe structures, including a trading post, hostel/stage stop, saloon, corrals, stables, a residence, sheds, and a well.

The construction of the Atchison, Topeka, and Santa Fe Railroad by 1880 drew traffic away from the ranch, and by the turn of the century many of the buildings had fallen into disrepair. Only the trading post close to the road remained structurally sound. Sometime during the early 20th century the complex was remodeled. By the 1960s the complex was again in disrepair and during the past decade has suffered severe damage from vandalism and the elements. However, the damage has been repaired, and the building has been stabilized. Of the buildings on the south side of the highway, only the large well is visible.

The development of highways along and on the Santa Fe Trail route culminated with the construction of I-25. This freeway parallels the trail near Pecos and replaced sections of it in the Apache Canyon area. New Mexico Highways 63 and 50 follow the route of the trail near Pecos and along Glorieta Creek near Pigeon's Ranch. The route of the Santa Fe Trail through the Pecos area is marked by a series of deeply scarred ruts visible in the pastures south and west of Kozlowski's Stage Stop and other locations close to the mission.

Tex Austin / Fogelson Ranch

During the 1920s rodeo entrepreneur Tex Austin acquired ranch lands south and east of Pecos Pueblo, where he established the Forked Lightning Ranch, a large cattle ranching operation that encompassed most of the former Pecos Pueblo lands. Austin hired Santa Fe architect John Gaw Meem to design the main ranch house in a Mexican hacienda style. The house was completed in 1926 and served as the focal point of an exclusive dude ranch retreat for wealthy easterners. The headquarters compound is made up of the ranch house and the nearby casita, along with several ancillary structures, walkways, and trap shooting towers enclosed by a masonry wall. The buildings are accessed by a narrow gravel road that winds across the grasslands from Kozlowski's, crossing Glorieta Creek just above its junction with the Pecos River.

The Forked Lightning Ranch is an excellent example of this era in American history. The overall national register significance of the Forked Lightning Ranch and its cultural landscape has not been determined.

Glorieta Battlefield

Pigeon's Ranch/Kozlowski's Stage Stop. Both Pigeon's Ranch and Kozlowski's Stage Stop were used by Civil War military forces who were involved in the 1862 Battle of Glorieta Pass. Troops were billeted at Kozlowski's and used the tavern there as a hospital. Pigeon's Ranch was one of three major sites where Confederate and Union forces fought. During the battle Union forces were able to strategically position troops at three overlooks: Sharpshooter's Ridge, Artillery Hill, and Windmill Hill. These ridges form a boundary around the valley where the battle took place.

Private development has modified much of the battlefield area. Confederate burials have been reinterred at the Santa Fe National Cemetery. Low earthen berms and foundations mark the former location of a number of fallen walls and structures at Pigeon's Ranch, and the entire area has tremendous potential for scientific archeological research into early day trading posts and the Civil War battles. As indicated in the previous section, the significance of Pigeon's Ranch in American history is commemorated by its inclusion on the National Register of Historic Places as a national historic landmark and as part of the Glorieta battlefield.

Arrowhead Lodge, built in the 1800s, is also in the Pigeon's Ranch area of the Glorieta unit. This irregularly shaped building on the south side of NM 50 has been remodeled a number of times. Six cabins are west of the lodge. Together the structures and their setting comprise an archeological site.

Cañoncito / Johnson's Ranch. The legislated park boundaries for the Canoñcito subunit contain no NPS-owned lands at this time. However, among the more important known resources in this subunit is Johnson's Ranch near the west end of Apache Canyon.

The Johnson's Ranch area has been modified since the 1862 battle by removing ranch buildings and constructing I-25 and the Santa Fe Railroad through the site. Borrow pits have altered some of the terrain, modern buildings have been

constructed, and hilltops have been graded. Other structures, including a church and cemetery, remain on the west side of the interstate. Their age and association with the ranch or the battle are not known at this time.

ARCHEOLOGY

Pecos National Historical Park is also important for its association with A. V. Kidder, whose work was important in developing American archeology. His systematic excavations established the foundation on which much of southwestern archeology is based. He introduced a multidisciplinary approach to archeology, pioneered new methods of artifact recordation and analysis, and used stratigraphic excavations, ceramics analysis, and tree ring dating to determine occupation dates of regional sites, a typology still viable today. His work has had a lasting impact on area archeology and the understanding of cultural growth and development.

Research Conducted to Date

Beginning with visits to Pecos Pueblo by Adolph Bandelier during the late 1800s, numerous archeological surveys and investigations have been conducted at Pecos over the years. Much of the early archeological work at Pecos was conducted by A. V. Kidder before 1929. His findings are included in a series of published reports. The bibliography of work done at Pecos National Historical Park is too extensive to include here, but most of the archeological reports are held by the New Mexico Museum's Laboratory of Anthropology in Santa Fe or by Pecos National Historical Park. Most of the early work was site specific and was done prior to the inception of many modern techniques.

In 1981 Dietrich Fliedner undertook to map and analyze sites all across the area as part of a study of the distribution of field houses. However, his analysis was based on cultural geography and contains very little archeological information. Surveys of the northern portion of the Forked Lightning Ranch were done by the Park Service in 1976, and in 1979–80 the University of New Mexico Field School worked in the southernmost part of the ranch. Historic structure reports currently underway by the Southwest System Support Office will provide a listing and general evaluation of past investigations at the pueblo and several of the park's major historic sites. The National Park Service prepared a summary of survey results on Forked Lightning Ranch in 1992. Further archeological surveys are planned for 1995–97.

Archeological Sites

Collectively the park's estimated archeological sites comprise an unsurpassed record of 10,000 years of human history in this part of the Southwest. A total of 132 sites have been recorded in the original monument, 139 more in the surrounding Forked Lightning Ranch unit, 7 at Pigeon's Ranch, and only 1 (the general area of the Confederate camp) at Johnson's Ranch.

The variety of sites along a lengthy temporal continuum, their quality, deposit area, and direct association of many with the Pecos Pueblo / mission ruins complex makes the park extraordinary for scientific study and public education. Sites vary widely in size, type, and features. Sites and features include pueblos, cairns, ceramic and lithic scatters, check dams, depressions and mounds, fire-cracked rock, middens, nonstructural rubble, petroglyphs, pithouses, rock shelters, rock alignments, storage bins, structures, walls, tipi rings, hearths, bedrock grinding slicks, campsites, and refuse piles.

Archaic sites that represent the Oshara tradition, which date between ca. 5500 B.C. and A.D. 400 have been found in the Pecos River valley. One site in the park is listed as Archaic and one as Cochise (dating to perhaps 400 B.C.). A number of other procurement or processing sites may date to this period but lack diagnostic artifacts.

Three pithouses dating to Basketmaker times have been documented near Pecos Pueblo, and a total of four sites across the park are thought to be pithouse depressions (NPS 1992b). Several of these structures are of different design and dates and show evidence of remodeling. Similarities include mud and pole superstructures set over excavated rooms with firepits, bins, and deflector screens.

Only a few of the area sites can be directly attributed to PII–PIII times, ca. A.D. 900-1300; these sites are identified by their structural remains and ceramic scatters. The majority of the park's sites are thought to date between 1350 and 1600 — the period encompassing PIII–PV. Again, primary indicators of these sites are structural remains and diagnostic lithics and ceramics. Precise numbers are not given because many of the old site forms do not have any designation for cultural affiliation; such sites are indicated merely as "Anasazi" or "unknown." In addition, different researchers have defined different dates for various cultural periods, making the categorization of sites difficult. Most of the large pueblo sites, except Pecos, date to earlier in the period. The Pecos Pueblo was the primary occupation site during the latter period. Most of the large pueblo sites are on a hilltop relatively near water and on arable land.

Pueblo sites are scattered throughout the park but tend to be concentrated along drainages or in areas where special resources exist. Pecos' prehistoric sites represent a continuum of occupation temporally, physically, and traditionally, and they are associated with the development of an historic eastern pueblo group whose descendants now reside at Jemez Pueblo. Pecos' sites are a part of and reflect a whole series of evolutionary and cultural changes across the Southwest, especially the rise, fall, and acculturation of different cultural groups and their adaptations to the environment and to each other.

Only a few known sites are directly associated with the early historic period. They include pueblo-like structures (probably Spanish) and a few tipi rings and other physical evidence thought to be related to Plains Indian groups who camped and traded at Pecos Pueblo. From perhaps 1600 to the 1820s, sites at Pecos are primarily Hispanic and are concentrated in the area of Pecos Pueblo. La Placita is an exception. From the 1820s through the early 1900s the majority of the historic sites found in the park (Kozlowski's Stage Stop, the mill, the Santa Fe Trail ruts) are linked with the Santa Fe Trail. The Colonias bridge is a community marker special to the Hispanic community. Aside from historic debris dated from the 1846 to 1912 period, all other historic sites are 20th century and are linked to the development of the ranching industry.

Researchers believe Pecos Pueblo represents the coalescence of local and emigrant groups from areas outside the Pecos River valley. The types and number of religious structures present in Pecos Pueblo illustrate the formal integrative mechanisms needed to bond together such disparate populations. Smaller sites in the park dating to the PIV–PV periods — field houses, hunting camps, and resource procurement and processing areas are also significant because they better our understanding of the everyday lives of Pecos Pueblo inhabitants.

CULTURAL LANDSCAPE

The entire area within the boundary of the park is a cultural landscape, potentially eligible for listing on the national register as one or more nationally significant cultural landscapes. At least four broad time periods are represented within the landscape: the precontact period, the pueblo/mission period, the Hispanic settlement / Santa Fe Trail / Civil War period, and the ranching period. A cultural landscape overview, which discusses the relative significance, integrity, and potential national register eligibility of these landscapes, is currently underway by the Southwest System Support Office .

Very significant is the ethnographic landscape, whose primary elements include the Pecos Pueblo / mission ruins complex, Apache sites, and the Hispanic frontier sites. Visually this landscape stretches to the horizon in all directions and includes rolling grasslands, forested mountains, and the immediate environs of the pueblo. These cultural sites and physiographic features hold traditional and historical importance for contemporary Puebloan and Hispanic groups and are an important part of their cultural identity.

The Pecos unit landscape is a combination of ethnographic, historic vernacular, and historic designed landscape types. Preliminary analysis of the Pecos unit indicates that it is significant primarily in terms of the continuum of uses over time. Within the Pecos unit, the Pecos Pueblo/Spanish Mission area within the previous Pecos National Monument boundary illustrates landscape modification during the pueblo/mission period. Areas along Glorieta Creek and the Pecos River containing the Santa Fe Trail / Kozlowski complex, trail ruts, spring, mill, and other physical features are associated with the period from ca. 1821 to post Civil War. Two discontiguous areas could also be considered part of this landscape. However, aside from natural features and the Santa Fe Trail ruts, much of the integrity of this landscape is compromised by modern additions. The ranching period, ca. 1920 to 1991, is well illustrated in the area between NM 63 and the Pecos River. Here the ranching influence can be seen in the fenced pastures; architectural features such as the ranch house complex (all structures, landscaping, roads, bridge), Kozlowski's complex (including corrals, outbuildings, ranch roads, parking, spring, courtyard/landscaping) and ancillary ranch structures (such as ponds, loading pens, roads, and fences). The ranch house — and possibly the casita (the smaller house just north of the ranch house) — are also architecturally significant as a product of the architect, John Gaw Meem.

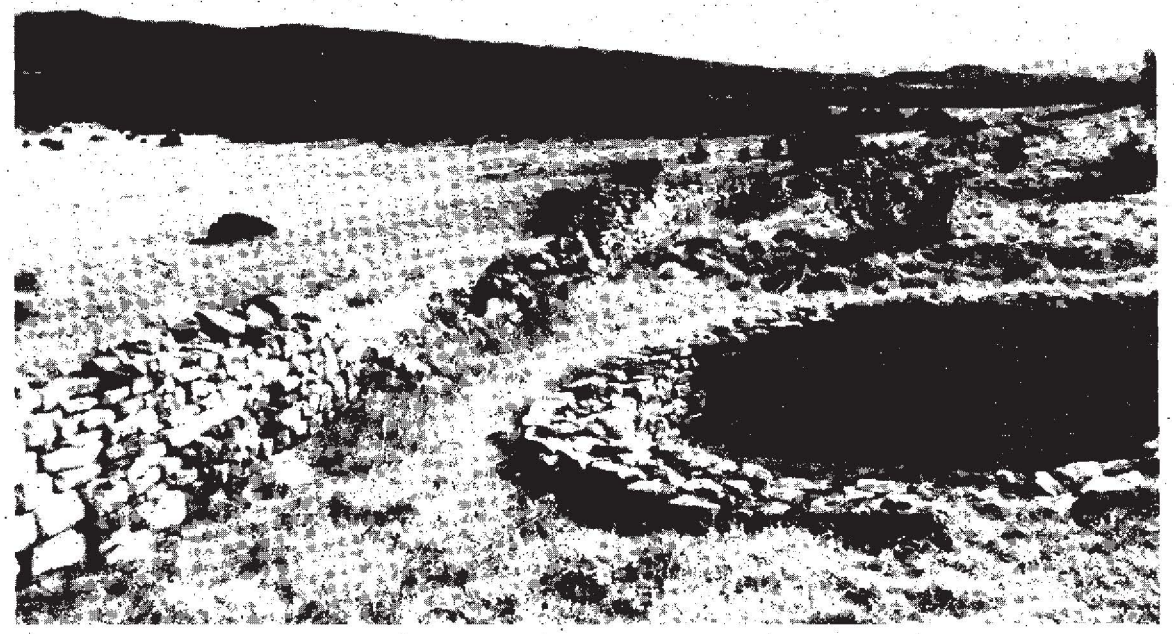
The Glorieta unit landscape is a combination of historic site, historic vernacular, and potentially ethnographic landscape types, and it is significant primarily as the site of the Battle of Glorieta Pass. The remains of the Pigeon's Ranch complex, the topographic high ground used strategically during the battle, and the meadow to the north of Pigeon's Ranch are among the elements that define the character of this landscape within the boundaries of the park.

National Register Eligibility

The original monument was listed on the National Register of Historic Places in 1991 and the newly acquired lands that comprise the remainder of the park are eligible for inclusion on the national register. Pecos Pueblo, Kozlowski's Stage Stop, and Pigeon's Ranch are national historic landmarks. Recommendations for further study will include the revision of national register forms to evaluate the cultural landscape, as well as sites and structures.

Ethnographic Sites

Hispanic groups and Indian tribes have a long and deeply felt attachment to Pecos, and numerous sites and natural features throughout the park have special significance to them. Because public disclosure of the location or nature of these sites could diminish traditional values or risk harm to the resource, specific sites and locations will not be discussed in this plan.



NATURAL ENVIRONMENT . . . . .

GEOLOGY AND SOILS

The bedrock of the Pecos River valley floor consists of Pennsylvanian and early Permian soft shales, sandstones, siltstones, limestones, and conglomerates of the Sangre de Cristo formation. This formation is of sedimentary origin, was deposited 200 to 300 million years ago, and is 800 to 1,000 feet thick. Most of the formation is covered by alluvial fill and a mantle of thick soil derived from weathering and decomposition. The Magdalena group, consisting primarily of limestone, underlies the Sangre de Cristo formation. Outcroppings are exposed on both sides of the Pecos River by the ranch house. Outcrops along Glorieta Creek are of igneous and metamorphosed Precambrian rocks, the Magdalena group and the Sangre de Cristo, Yeso, and San Andres formations.

This region has a history of faulting, uplift, and subsidence. Uplifting of the land and downcutting of the Pecos River during the Pleistocene are largely responsible for the area's present topography. Seeking a path of least resistance, the Pecos River carved a broad lowland — the Pecos-Glorieta corridor — into the shales exposed between the Tecolote Range and Glorieta Mesa. Glorieta and Galisteo Creeks also eroded the Sangre de Cristo formation and formed the western half of the Pecos-Glorieta corridor. Subsequent uplifting and downcutting has shifted the Pecos River eastward to its present entrenched course along the western border of the Tecolote Range. Deep alluvial gravel deposits and a series of terraces mark the former course of the river. Streams are continuing to shape the valley's topography, cutting into old terrace surfaces, forming new terraces, and exposing the underlying bedrock.

Based on regional seismic and exploration activities, the formations in the park are not believed to have commercially exploitable mineral deposits, and the various strata are not associated with oil and gas producing beds (NPS 1984).

The soils of the original monument and the Forked Lightning Ranch were not included in the Soil Conservation Service's survey of San Miguel County. However, based on preliminary field work, several major soil map units can be distinguished in the area: the Vibo-Ribera association occurs on undulating lands, the Ribera-Sombordoro-Vibo association occurs on moderately sloping lands, the Tuluso-Sombordoro-Rock outcrop complex is found on moderately sloping lands, and the Laporte-Rock outcrop complex covers the steep badlands east of the Pecos River. On the Pecos River and Glorieta Creek floodplains there are frequently flooded soils. The upland soils vary from deep fine sandy loams on relatively flat slopes to very shallow stony loams on the ridges. The Natural Resources Conservation Service (the new name of the Soil Conservation Service) is currently conducting a soil survey of the Pecos unit.

Generally the park's soils are moderately to well drained, have moderate permeability, and have moderate erosion hazards. Many of the soils have moderate to severe limitations for building. Soil erosion and gullying is apparent in the arroyos that drain into Glorieta Creek across from Kowzlowski's and further upstream.

The soils in the Glorieta unit have been mapped by the Soil Conservation Service. Soils in the Pigeon's Ranch area were mapped as Cueva very stony clay and Capillo-Rock outcrop complex on hilly to very steep areas; Ortiz gravely loam on gently rolling to steep lands; and Preweitt loam and Rednum loam on nearly level to moderately sloping lands. These soils generally have moderate to slow permeability, medium to very rapid runoff, and severe to very severe erosion hazards.

Soils in the Cañoncito subunit were mapped as Pojoaque-Rough broken land complex, stony rock land on steep to very steep slopes, Travessilla-Rock outcrop complex on nearly level to moderately steep slopes, and Fivemile loam on level to gently sloping lands in the Galisteo Creek valley floor. These soils have moderate permeability, medium to rapid runoff, and moderate to severe erosion hazards.

With one exception, none of the soils in Pecos National Historical Park have been identified by the Soil Conservation Service as being prime or unique agricultural soils. In the Cañoncito subunit, however, the Fivemile loam soil is potentially a prime agricultural soil if the soil has ever been irrigated (SCS, Ed Kozdorfer, pers. comm., n.d.).

AIR QUALITY, NOISE, AND VISUAL RESOURCES

Pecos National Historical Park lies in an airshed where air quality is rated as better than required by the primary or secondary national ambient air quality standards. Air quality and visibility is usually excellent, offering clear views of the Sangre de Cristo Mountains. However, in the winter air inversions periodically trap smoke from woodburning stoves, resulting in a haze that hangs over the upper Pecos River valley from Rowe to Pecos.

The significance and integrity of many park resources depend on good air quality. Air pollution, even at concentrations below national standards, can degrade visual air quality, harm vegetation, and diminish the enjoyment of park resources. Under the provisions of the Clean Air Act of 1977 (42 USC 7401 et seq.), Pecos National Historical Park is designated as a class II clean air area. Under this designation limited development can be permitted near the park as long as the levels

of particulate matter, sulfur dioxide, and nitrogen dioxide do not exceed the class II increments (maximum allowable increases).

Noise levels have not been measured in the park. Although noise levels are relatively quiet for the original monument and Forked Lightning Ranch, background noise from automobile and truck traffic on I-25 and NM 63 and trains on the Santa Fe railway can be heard throughout most of the park. This noise is much louder in the Cañoncito area because I-25 and the railway are 0.25 mile away. Noise from vehicle traffic is also present in the Pigeon's Ranch area along NM 50.

The views at Pecos National Historical Park are dominated by the surrounding mountains, which provide dramatic topographic relief and visual contrast with the nearby mesas, rolling valley terrain, and wooded river valleys. Modern features such as the railroad, the interstate highway, and buildings are far enough away that there is little or no intrusion. Park visitors can stand on the trail at the Pecos Pueblo / mission ruins complex and see a view very similar to that seen by ancient pueblo inhabitants.

Although a few developments and structures can be seen from the park, the Pecos River valley has largely retained its visual integrity. The interstate and the railway can be seen from several high points in the park.

The Glorieta unit has several major visual intrusions. I-25 dominates the Cañoncito subunit, and the Atcheson, Topeka, and Santa Fe Railroad crosses through the area. In addition, four residences are present in the Cañoncito area. Several residences and commercial structures also are visible along NM 50, which traverses the entire Pigeon's Ranch area.

The Forked Lightning Ranch has some visual detractions. Along Glorieta Creek southeast and west of the trading post there is evidence of two small gravel operations.

A boneyard south of the trading post is still present. Two other trash dumps were buried, one of which has been cleaned up. Except for a small amount of diesel fuel that has been cleaned up, no hazardous materials are known to be in these dumps. Level I and II hazardous material surveys have been completed. To date, only a few sites have been identified to have contaminants. Of highest concern was asbestos detected in the main ranch house. All contaminated sites have been or are being cleaned up.

HYDROLOGY

The Pecos River and Glorieta Creek are the two major drainages that run through Pecos National Historical Park. The Pecos River is one of only five year-round, free-flowing rivers in New Mexico and is one of the longest in the state. The river begins about 30 miles north of the park in the Sangre de Cristo Mountains; from the park the river flows southeast for about 926 miles and joins the Rio Grande in Texas.

About 3.5 miles of the Pecos River run through the park. The U.S. Geological Survey has collected discharge data for the river from a gauging station 9 miles above the village of Pecos since 1920. From October 1979 to September 1991 the river's average daily mean discharge ranged from a low of 46.8 cubic feet per second in water year 1981 (October 1980 to September 1981) to a high of 176 cubic feet per second in water year 1982. The river's flow varies considerably during the year, with the highest flows generally occurring in May and June and the lowest flows December through February. The highest recorded daily discharge from October 1979 through September 1992 was 1,980 cubic feet per second in May 1991.

Glorieta Creek begins near Glorieta Pass and flows through the Pigeon's Ranch area in the Pecos unit before joining the Pecos River. Altogether, about 3 miles of the creek flow through the park. Glorieta Creek has very low flows during the summer, but water levels can increase substantially after thunderstorms.

The park also contains several smaller surface water resources. Galisteo Creek, a small intermittent stream, flows through the Cañoncito subunit. There are many small intermittent drainages or arroyos in the Pecos unit. When it rains, water from these arroyos discharges into the Pecos River. Two small springs are known to exist in the park, although others may be present. One unnamed spring is by Glorieta Creek near Kozlowski's Stage Stop. A second spring, Poison Spring, is east of Pecos Pueblo in the original monument. This spring is reduced to a muddy seep prior to being recharged by the summer rains and winter snow melt. Two small artificial ponds are also present by Kozlowski's. An earthen dam holding back water in one of these ponds has been breached and is eroding away. The larger artificial pond still holds water after it rains.

Limited baseline water quality data exist for Pecos National Historical Park. Concerns have been raised about the effect heavy metals and mill tailings of the former Terrero mine (20 miles north) have had on the Pecos River watershed. The U.S. Fish and Wildlife Service has detected elevated levels of heavy metals, including lead and selenium, in fish upstream of the park (USFWS 1991). However, baseflow water quality in the Pecos River appears to meet state standards (Jim Piatt, pers. comm., n.d.).

In the summer of 1992 the Park Service began testing the Pecos River in the park for baseline water quality variables and contaminants. Preliminary results indicate elevated levels of heavy metals, including arsenic, chromium, lead, selenium, and PCB in the river's fish. The levels of lead, arsenic, and chromium in these initial samples are at levels of concern for human health and fish and wildlife predators. Additional studies are needed to determine the nature, extent, and source of the pollutants.

Very limited water quality information is available for Glorieta Creek. The stream's water quality is believed to meet state standards. However, park staff reports that Glorieta Creek shows evidence of extreme eutrophication, with thick algal blooms occurring in the spring, summer, and fall. Potential sources of pollution include the wastewater lagoons and/or residential septic systems along the creek. The creek needs to be monitored for fecal coliform, nutrients, chloride, and turbidity to evaluate potential water quality issues.

VEGETATION

The Pecos River valley is in the Rocky Mountain conifer vegetation zone, within a transition zone between piñon/juniper and ponderosa pine. The park is also close to the grasslands of the Great Plains. The entire area has been subjected to a long period of human use, including hunting, gathering, cattle and sheep grazing, and grain and fruit production. These agricultural uses have affected the species composition of local plant communities. Naturally occurring fires have been suppressed for at least 50 years in the Pecos and Glorieta units.

The New Mexico Forestry Department conducted an inventory of the plants in the park. The inventory began in the fall of 1992 and was concluded in October 1994.

Approximately 41% of the Pecos unit is covered by piñon/juniper, interspersed with ponderosa pine and Douglas-fir. Another 26% of the area is covered primarily by piñon/juniper, and 10% with a juniper/grassland cover. Approximately 3% of the unit has floodplain meadows. Less than 1% of the unit has riparian deciduous forest. About 15% of the unit consists of pastures. The remaining 5% of the area has been developed or altered by human activities (e.g., disturbed forest, roads, buildings) or is covered by water (e.g., Pecos River, Glorieta Creek).

Piñon/juniper forest is the most common vegetation community present in the area, covering the valley floor between Glorieta Mesa and the foothills of the Sangre de Cristo Mountains. Most of the land that has not been developed or grazed in the Pecos and Glorieta units is covered by this type of forest. Small areas of old-growth piñon, which is an increasingly rare habitat type in New Mexico, are present (NPS 1984). Interspersed in the piñon/juniper forest types, usually on the north-facing slopes of more mesic sites, are clusters of ponderosa pine. On the east side of the Pecos River are larger stands of ponderosa pine and Douglas-fir interspersed among the piñon/juniper forests.

Large open pastures are also present in the park — much of the Pecos unit west of the Pecos River was covered by pastures. These areas were primarily cleared by people for cattle grazing. Without grazing or fire, many of these grasslands will probably be replaced by piñon/juniper forest.

Cottonwoods and willows dominate the riparian plant community along the Pecos River and Glorieta Creek (see "Floodplains and Wetlands" section). The oldest stands of cottonwoods along the river were likely established before the turn of the century. The cottonwood/box elder plant association is considered to be the climax community in areas that are subject to periodic flooding or near the surface water table (Muldavin 1991). However, Muldavin reported that cottonwood trees were dying in areas away from the main channel that were no longer flooded and speculated that these cottonwoods eventually might be replaced by open meadow, dry shrubland, or possibly piñon/juniper. There is also a lack of middle-aged cottonwood stands along the river. It is unclear whether beaver herbivory has decimated the saplings or whether the lack of beaver has altered natural conditions that give rise to sapling regeneration; for example, flooding associated with beaver dams can provide the necessary moisture for propagation (Muldavin 1991).

Other plants that grow along the Glorieta Creek and Pecos River riparian areas include tamarisk, cattail, and rushes. Grasses, including blue grama, sand dropseed, wheatgrass, and Indian ricegrass, are common on the floodplain and

nearby valley slopes. Various shrubs, forbs, and cacti grow on slopes bordering the streams, including gooseberry, apache plume, wild rose, currant, yucca, mountain mahogany, tansy mustard, cholla, and prickly pear.

The Pecos River in the southern part of the Pecos unit and the Glorieta Creek on the northwestern portion of the unit support a rare cottonwood hybrid species, lance-leaf cottonwood. This species is believed to be a cross between narrow-leaf cottonwood, found at higher elevations, and plains cottonwood, found at lower elevations. The presence of the hybrid cottonwood shows evidence of evolution in process (Northern Arizona University, Tom Whitman, pers. comm., n.d.). Additional studies are needed to determine the significance of this rare plant species.

Several exotic plant species are present in the park, including Mexican fireweed or kochia, European clovers and grasses, bindweed, Russian thistle, mullein, Siberian elm, salt cedar, and Russian olive. An old apple orchard is also present near the Pecos River.

FLOODPLAINS AND WETLANDS

Based on the alluvial terraces, soils, and vegetation, the drainages in Pecos National Historical Park frequently flooded in the past. These floods probably happened in the spring when snow melt runoff was carried down from the mountains and in the summer when intense thunderstorms occurred. In September 1904 a large flood occurred on the Pecos River, and in September 1929 another flood estimated at 4,500 cubic feet per second occurred. Although precipitation in most places is almost immediately absorbed by the park's soils, Glorieta Creek and the arroyos can flash flood during thunderstorms.

The Federal Emergency Management Agency has mapped the 100-year flood boundaries for the park; the 500-year flood boundaries have not been mapped. The 100-year flood boundaries for the Pecos River, Glorieta Creek, and Galisteo Creek in the park are narrow, averaging about 500 feet or less in width. No base flood elevations were determined by the Federal Emergency Management Agency. However, all of the existing park facilities are on terraces well above these designated floodplains.

Under the U.S. Fish and Wildlife Service's National Wetlands Inventory (NWI) program, wetlands in Pecos National Historical Park were mapped in 1984 at 1:100,000 scale. Four major physiognomic divisions were identified: cottonwood riparian forests, willow riparian shrublands, wetlands, and uplands. Known wetland communities consist of cattail swamp, water sedge/baltic sedge wetland, and shrubby sandbar willow/horsetail wetland. These wetlands all occur in areas where there is permanent standing water (often fed by springs) or areas that are subject to periodic flooding (Muldavin 1991). They correspond in the NWI classification to palustrine and riverine wetlands.

The riparian cottonwood forest and willow riparian shrublands, which dominate most of the riparian zone, also may be classified as wetlands. The riparian shrublands correspond to the palustrine/scrub/shrub/broad-leaved deciduous classification, while the riparian forest corresponds to palustrine/forested/broad-leaved/temporarily flooded classification.

In the rest of the park semiarid soils, rainfall, and topography probably preclude wetlands except near streams and springs. In the Pecos unit wetlands occur along Glorieta Creek and by Poison Spring. An impoundment south of the Pecos unit periodically backs up water onto a small flat area on the ranch's southern boundary in the winter and spring. Waterfowl use this area in the spring. A wet area occurs immediately east of the parking area near the visitor center. This has been delineated by the U.S. Army Corps of Engineers and determined to be a jurisdictional wetland. Riparian and wetland communities also probably occur along Glorieta Creek in the Pigeon's Ranch area and along Galisteo Creek in the Cañoncito subunit. These areas must be surveyed and wetlands delineated before any management actions are taken that could affect potential wetlands. If a proposal would adversely affect wetland habitat, the action would need to comply with section 404 of the Clean Water Act, Executive Order 11990, and NPS guidelines for implementing the executive order. Consultation with the U.S. Fish and Wildlife Service and the Army Corps of Engineers also would be required.

WILDLIFE

Pecos National Historical Park supports a variety of wildlife because of its diverse topography and because it has year-round water sources. Riparian areas are probably the most important natural feature of the park providing shelter for wildlife, habitat for breeding and feeding, and a route for migrations.

Biologists from the University of New Mexico conducted an inventory of the vertebrates and invertebrates in the Pecos unit; this study was completed in 1994. A 1984 Park Service study of the Forked Lightning Ranch listed 54 mammal, 49 bird, 29 reptile, and 6 amphibian species that may inhabit the ranch area. According to the NPS study, rodents and lagomorphs such as the cottontail rabbit, jackrabbit, Colorado chipmunk, pocket gopher, piñon mouse, deer mouse, and Mexican woodrat are probably the most common mammals in the area.

Coyote are frequently heard calling in or close to the park. With the cessation of grazing, mule deer are moving back into the ranch area and have been observed along the Pecos River. Black bear tracks have been seen in the Pigeon's Ranch area and in the Pecos unit. Mountain lion tracks also have been seen in the Pecos unit. Other mammals in the park may include bats, raccoon, skunk, gray and red fox, long-tail weasel, muskrat, porcupine, cottontail and jack rabbits, and beaver. The river's riparian area also was historic habitat for river otter.

Two limited surveys have been done of birds in the Forked Lightning Ranch. A biologist from the New Mexico Department of Game and Fish identified 45 species in the ranch on April 30, 1988 (John Hubbard, pers. comm.). A more thorough study of the original Forked Lightning Ranch was conducted in 1988 (Mukai 1989). However, this study covered the original 13,000-acre Forked Lightning Ranch, and about half of the study sites were outside park boundaries. Consequently, the data and observations in this study must be cautiously considered — although the conclusions probably are true for the park, not all of the specific observations may be relevant. This study reported 109 bird species on or near the original Forked Lightning Ranch. Of this total, 24 species were found year-round, 68 were found only in the summer, 7 were transients, and 10 were found only in the winter. Representative summer residents included broad-tailed hummingbird, gray flycatcher, violet-green swallow, canyon wren, solitary vireo, western tanager, and

vesper sparrow. Representative year-round residents included American kestrel, hairy woodpecker, black-billed magpie, common raven, plain titmouse, mountain bluebird, and house finch. The study indicated there was breeding evidence for 51 species. Representative breeders included great horned owl, northern flicker, ash-throated flycatcher, scrub jay, black-throated gray warbler, lark sparrow, and lesser goldfinch.

The Pecos River riparian area was observed to be the most important bird habitat in the ranch, with the highest number of bird species and the greatest number of nest sites (Mukai 1989). Several bird species were found nesting in cavities in dead trees, snags, and stumps. Brown-headed cowbirds were also observed in the area. These birds were probably attracted to the ranch and nearby areas because of the grazing cattle. The cowbirds were practicing "brood parasitism," laying their eggs in the nests of other species, which then incubated the cowbird eggs. The reproduction of six species was observed being affected by the presence of the cowbirds.

The Pecos River in the park supports rainbow trout and brown trout. Both of these species were introduced and are not native to the river. The Rio Grande cutthroat trout also may once have inhabited the park (New Mexico Department of Game and Fish, Michael Hatch, pers. comm., n.d.). Other fish species occurring in the park include white sucker, long-nosed dace, fathead minnow, and Rio Grande chub. In the summer of 1992 New Mexico Department of Game and Fish biologists examined the river's fishery in the park. They indicated that the number and size of fish in the park were average for the Pecos River and above average when compared to statewide fisheries (Stumf 1992).

THREATENED AND ENDANGERED SPECIES

No known federally listed threatened or endangered plants or animals have been positively identified in Pecos National Historical Park. However, several species that are listed, proposed, or candidates for listing may occur in the park. The Fish and Wildlife Service identified four listed species that may occur in the area: bald eagle *(Haliaeetus leucocephalus)*, peregrine falcon *(Falco peregrinus anatum)*, Mexican spotted owl *(Strix occidentalis lucida)*, and Southwestern willow flycatcher *(Empidonax trailii extimus)*. The Holy Ghost ipomopsis *(Ipomopsis sancti-spiritus)* has been proposed for federal listing as an endangered species with critical habitat. The southwestern willow flycatcher has been listed as endangered with the critical habitat identification deferred until July 1995.

The bald eagle winters in the upper and middle Pecos River valley and potentially could be found in the park's riparian areas. It also may fly through the area during migration.

The American peregrine falcon prefers nesting areas with steep, rocky cliffs near water. The peregrine falcon could nest in the rugged canyons east of the Pecos River. Peregrines also may pass over the park during spring and fall migrations. A peregrine was observed flying down the Pecos River valley near the park in June 1988 (Mukai 1989).

The Mexican spotted owl has been recorded in the Santa Fe National Forest. Its habitat consists of caves, cliff ledges, witches' broom, and stick nests of other species in mature and old-growth forest associated with steep canyons. The owl prefers higher elevation mixed conifers but can be found in piñon/juniper, pine/oak, and ponderosa pine forest

types. Despite that, Pecos National Historical Park is not believed to contain sufficient habitat to support this species (New Mexico Department of Game and Fish, Sandy Williams, pers. comm., n.d.).

The southwestern willow flycatcher may use the park's willow/cottonwood riparian area. In 1992 a pair was identified nesting about 3 miles upstream from the park, and a 1994 biological survey indicated a possible sighting of this bird in the park (Parmenter 1994)

The Holy Ghost ipomopsis is a biennial to short-lived perennial plant that has been identified in the mountains north of the park and could occur in the park. The species was not located during 1994 biological surveys (New Mexico Department of Forestry, Bob Sivinski, pers. comm., n.d.).

In addition to listing threatened and endangered plants and animals, the Fish and Wildlife Service maintains a list of plant and animal candidate species (species being considered for addition to the list of federally endangered and threatened wildlife and plants). Category 2 refers to species for which current information indicates that listing is possibly appropriate but for which conclusive data on biological vulnerability and threats are not available.

A total of 125 species of dwarf milkweed *(Asclepias uncialis)*, a category 2 species, were found at a single location in the park. This species often occurs at disturbed or eroded sites. Two other category 2 plant species may occur in the park. Grama grass cactus *(Pediocactus papyriacanthus)* could occur in the ranch grasslands among the piñon/juniper, although the park's elevation makes it less likely to be present. Santa Fe cholla *(Opuntia viridiflora)* may also be present in deep soils in the ranch's piñon/juniper forest and grasslands (Paul Knight, pers. comm., n.d.). However, this species is known to occur on only one hillside in Santa Fe and is not considered likely here (New Mexico Department of Forestry, Bob Sivinski, pers. comm., n.d.).

Five category 2 candidate animal species were identified by the Fish and Wildlife Service as possibly occurring in the park. The occult little brown bat *(Myotis lucifugus occultus)* is a montane dweller and roosts in natural caves, hollow trees, under the bark of dead trees, and buildings. Although this bat has not been reported in the park, suitable habitat may exist. There are records of the occult little brown bat occurring in Mora County north of the park (University of New Mexico, Scott Altenbach, pers. comm., n.d.).

The spotted bat *(Euderma maculatum)* tends to inhabit remote areas with narrow canyons and streams and nearby cliffs or steep hillsides with loose rocks; it probably roosts in crevices among the rocks. However, no records exist that indicate this species occurs in San Miguel County.

It is considered unlikely that the following two category 2 candidates identified by the Fish and Wildlife Service occur in the park. Baird's sparrow *(Ammodramus bairdii)* could occur in the park's grasslands and piñon/juniper forests. However, this bird is considered to be a rare migrant in the area, flying through in the fall and spring, and is not known to breed in the park (New Mexico Department of Game and Fish, Sandy Williams, pers. comm., n.d.).

Similarly, the white-faced ibis *(Plegadis chihi)* has been observed in the park as an occasional migrant along the Pecos River; however, there are no breeding records for this species in the state.

New Mexico also maintains its own lists of endangered plants and wildlife and a list of rare and sensitive plant species. The bald eagle, peregrine falcon, Mexican spotted owl, Santa Fe cholla, grama grass cactus, and the Holy Ghost ipomopsis are all classified as endangered species by the state. The dwarf milkweed is on the state's sensitive plant species list.

The gray vireo *(Vireo bellii)* is a state-endangered songbird that has been identified in the park. This species characteristically inhabits dense shrubland or woodland along lowland streamcourses. The long-billed curlew *(Numenius americanus)* and the mountain plover *(Charadrius montanus)* are state-endangered birds that may migrate through the park. Say's pond snail *(Lumnaea caperata)* is a state-endangered mollusk that typically inhabits seasonally dry marshes, streams, and ponds. This type of snail has been reported about 20–30 miles from the park and may occur in the park. The meadow jumping mouse *(Zapus hudsonius)* is another state-endangered species that may exist, and riparian areas in the park may contain suitable habitat.

There are three other state-endangered plant species that could occur in the park: giant helliborine orchid *(Epipactis gigantea)*, Great Plains ladies' tresses *(Spiranthes magnicamporum)*, and Wright's pincushion cactus *(Mammillaria wrightii)* (New Mexico Department of Forestry, Bob Sivinski, pers. comm., n.d.). Wright's pincushion cactus occurs in deeper soils on alluvial slopes and grassy bottom areas of drainages. This species has been recorded about 20 miles from the park.

Limy bladder pod *(Lesquerella calcicola)* and Santa Fe milkvetch *(Astragalus feensis)* are also on the state's list of rare and sensitive plants and could occur in the park.

SOCIOECONOMIC ENVIRONMENT . . . . .

REGION

Santa Fe is the capital city and the major commercial/retail center for the northern part of New Mexico. Santa Fe is noted for its distinctive pueblo and territorial styles of architecture. The preservation of historic buildings is widespread. Santa Fe is known as one of the leading cultural centers of the Southwest, offering numerous art galleries, museums, and performances in music, dance, and theater, including the famous Santa Fe Opera.

The largest settlements closest to the park are the village of Pecos (near the park on the north) and Rowe (about a mile south of the park). The village of Pecos is incorporated and is home to about 1,012 people, predominantly of Hispanic descent. The area is starting to become a bedroom community because of high real estate prices in Santa Fe. Rowe is a smaller unincorporated town.

Mining once played a part in the area's economy, but not any more. The wood industry (collecting firewood, trees, and fencing materials), education (local schools), and some small businesses are the primary economic activities in Pecos. Rowe is home to a New Mexico state highway maintenance facility. Glorieta's primary activities pertain to the Glorieta Baptist Conference Center.

The park is accessed from I-25 interchanges at Glorieta, 8 miles west of the park via the village of Pecos, and Rowe, 3 miles south of the park.

VISITOR SERVICES

The Forest Service provides a variety of outdoor recreational opportunities, such as hiking, hunting, backpacking, fishing, camping, and horseback riding. Camping in the nearby Pecos area is provided by several sources. The Forest Service provides camping in the Santa Fe National Forest north of Pecos. About 130 sites in nine developed campgrounds are within 30 miles of Pecos National Historical Park. Backcountry and primitive camping is also available in the Santa Fe National Forest. The Forest Service does not require backcountry camping permits, and the amount of use is not recorded. The New Mexico Department of Game and Fish has three campgrounds, one of which is a group campground that provides 25 sites in the upper Pecos River canyon north of town. Townley RV park and Pecos RV park each have 10 RV sites with sewer hookups. The park does not provide any overnight camping facilities.

Limited visitor services are available in the village of Pecos. All necessary visitor services are available in Santa Fe. Future private sector development could provide more or a greater variety of visitor services nearby if demand warrants this action.

VISITOR USE

Visitation at Pecos National Historical Park has been relatively stable for the last eight years, with about 45,000 visitors annually (see figure 1). Prior to that, annual visitation had been in the upper 30,000s. With the expansion of the park and the addition of new visitor use opportunities comes the potential for annual visitation to increase again.

The park is open all year. The pattern of visitation at the park for 1993 was atypical because the peak month was June rather than July or August (see figure 2). Historically, June, July, and August are the three busiest months at the park. Typically visitation begins to increase in the spring, peaks during the summer, and declines significantly in the fall; the lightest use occurs in winter. Visitor use in June averages 220 people per day; January receives the least use, with an average of 41 people per day visiting the park.

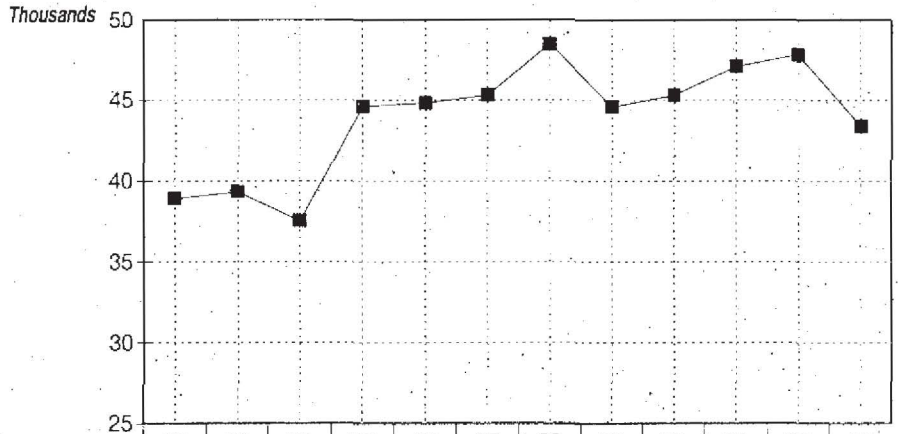
The day of peak use occurs on the first Sunday in August, when 200 to 500 people visit the park to attend a special Catholic mass. Most weekends are busier than typical weekdays. Holiday weekends are the busiest days at the park.

The park is a day use attraction. Park staff estimates indicate that almost 90% of visitors are nonlocal. Visitors usually fall into one of three categories.

The first type of visitors are drive-by visitors who get off I-25. Their visits are usually part of a longer trip and may be spontaneous or planned. Pecos National Historical Park is not their final destination.

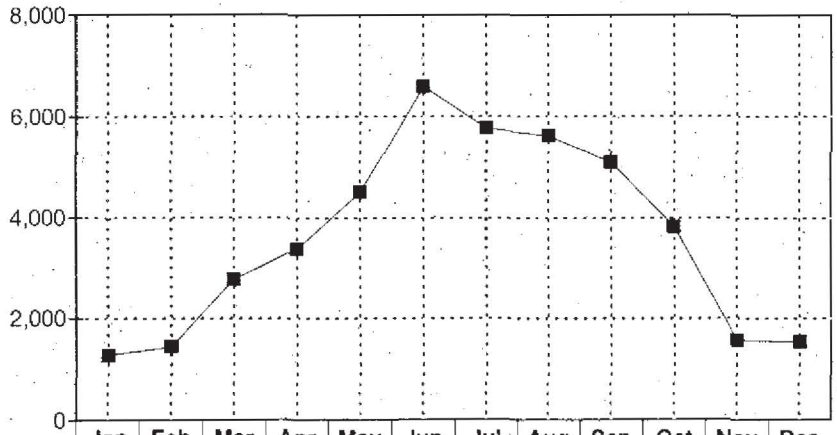
The second type of visitors are repeat visitors. Most of these visitors live in the Santa Fe or Albuquerque areas and will bring out-of-state friends and family members with them. For these people, Pecos National Historical Park is a day use destination.

FIGURE 1: ANNUAL VISITATION 1982-1993



	82	83	84	85	86	87	88	89	90	91	92	93
Recreational Visits	38.9	39.3	37.5	44.6	44.8	45.3	48.5	44.6	45.3	47.1	47.8	43.4

FIGURE 2: MONTHLY VISITATION FOR 1993



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Recreational Visits	1,275	1,437	2,770	3,377	4,508	6,590	5,770	5,625	5,107	3,824	1,565	1,531

The third type of visitors are visitors to the Glorieta Baptist Assembly. This nearby facility hosts 35,000 to 50,000 people per year. Many of these visitors travel from Texas, Louisiana, and Oklahoma. While participating in programs at the assembly, many of these people will visit the park as part of their stay in New Mexico.

Park staff estimates indicate the average length of stay for visitors is 1 to 1.5 hours. Typically visitors will spend 45 minutes hiking the interpretive trail and another 30 minutes at the visitor center.

Park staff estimates also indicate that 95% of park use occurs in and around the ruins and on the interpretive trail. Touring the visitor center and its museum, hiking the interpretive trail, and visiting the ruins are the primary activities. Currently, only a small portion of the park's central core area is available for visitor use. The majority of the park bordering the core, which is referred to as the Forked Lightning addition, is closed to the public at the present time.

The detached areas of the Glorieta unit additions receive minimal use. Although authorized as additions to the park, all of the Cañoncito subunit, including Johnson's Ranch, and about half of the Pigeon's Ranch subunit are in private ownership. A land acquisition program is underway.

Various cultural demonstrations are held at the park each year. Three special events were hosted in 1992 — the Annual Feast Day Mass, the 65th Pecos Conference (southwestern archeologists), and the Gateway Festival (craft and music fair). A limited number of guided tours and talks were also provided by the park staff.

Occasionally some visitors engage in activities that are inappropriate or in conflict with the purpose for which the park was established. To protect sensitive park resources, the superintendent has limited visitor use to designated trails and in some cases closed areas to all visitor use. There has been an increased interest in fishing, canoeing, hiking, biking, and other recreational activities.

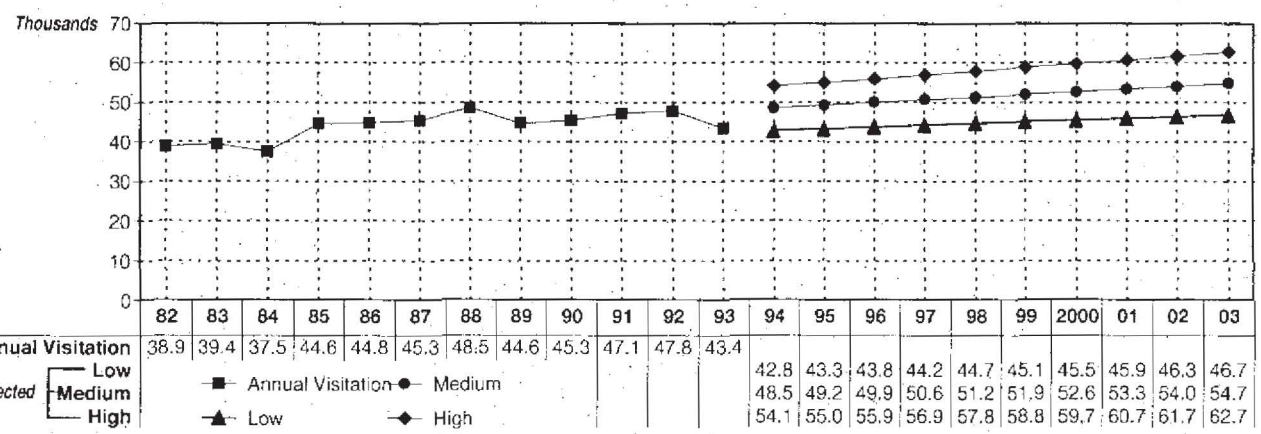
POTENTIAL DEMAND PROJECTIONS

A range of low, medium, and high visitor use projections are given for the next 10 years (see figure 3 and appendix C). When additional opportunities for park use are realized, visitation is likely to increase. Based on past visitor use, recreational visitation to Pecos National Historical Park in the year 2003 is projected to increase in the range of 7% to 44% over 1993 visitation. Because of the proposed improvements to the park it is likely that the visitation increase will tend toward the higher end of the projected range.

REGIONAL LAND USE

Future use of the lands surrounding the park will affect the park. There are a number of land use concerns that will affect the Pecos unit. To the south there are private lands subject to increased development pressures. Commercial and residential development may occur on private lands near the park's southern border.

FIGURE 3: RECREATIONAL USE PROJECTED THROUGH 2002



	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	2000	01	02	03
Annual Visitation	38.9	39.4	37.5	44.6	44.8	45.3	48.5	44.6	45.3	47.1	47.8	43.4										
Projected Low													42.8	43.3	43.8	44.2	44.7	45.1	45.5	45.9	46.3	46.7
Projected Medium													48.5	49.2	49.9	50.6	51.2	51.9	52.6	53.3	54.0	54.7
Projected High													54.1	55.0	55.9	56.9	57.8	58.8	59.7	60.7	61.7	62.7

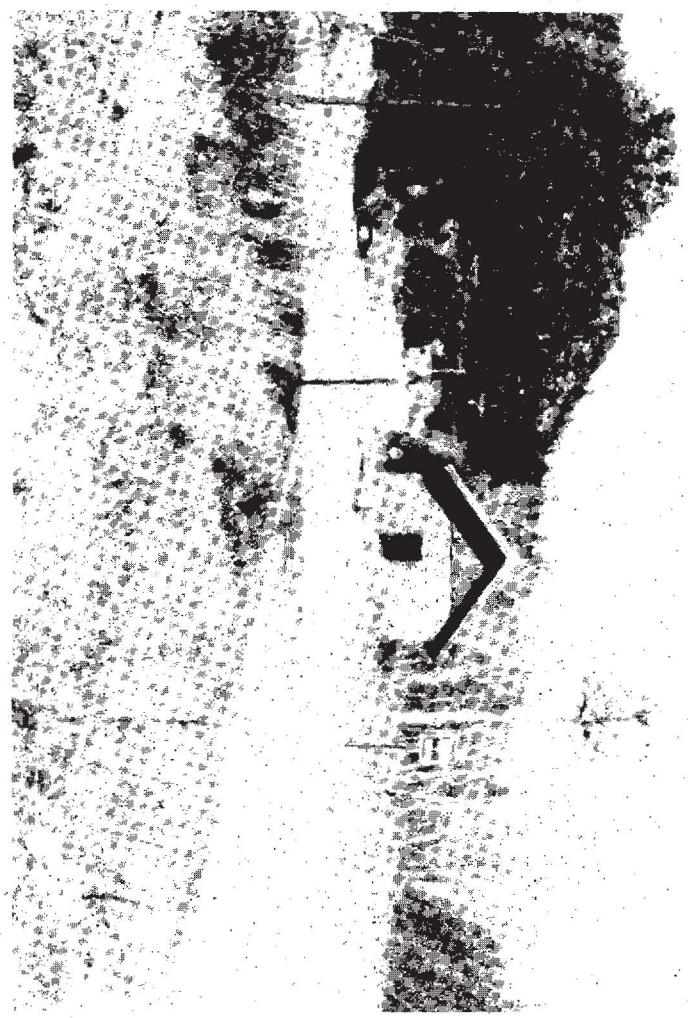
Some lands to the west are being developed for residential use. I-25 can be seen from the Pecos Pueblo / mission ruins complex, and future development along the interstate may affect other views from the park.

There is some oil and gas and mineral leasing activity on surrounding public lands managed by the Bureau of Land Management and the Forest Service. The staff of Pecos National Historical Park has responded to requests by these agencies to identify areas that could be affected by visual or auditory intrusions. Forest Service lands east of the ranch could be subject to timbering, grazing, or other uses that would negatively affect the viewsheds as seen from the park.

Development in the village of Pecos may affect the park north of the ranch. Developing a campground near the park is a possibility. The gentrification of Pecos is beginning to occur because of the area's relatively low real estate prices when compared to more expensive real estate in Santa Fe. The future use of private lands that intrude into the ranch unit from the north could also affect the park, although no problems currently exist.

The Glorieta unit will also be affected by nearby land uses. Highway and railroad rights-of-way, the need for access to private and public lands, and future development along I-25 are areas of concern.

Other current land uses that could impact the park include the Terrero Mine on New Mexico Department of Game and Fish land on the upper Pecos watershed, and the El Molino project. Upstream from the ranch unit there are external sewage lagoons (Glorieta Baptists, village of Pecos), which may have an effect on water quality in the park.



ENVIRONMENTAL CONSEQUENCES

IMPACTS COMMON TO ALL ALTERNATIVES . .

CULTURAL RESOURCES

Construction could directly affect archeological resources by disturbing and compacting soils and damaging artifacts and site context. Mitigating measures are explained in the "Alternatives, Including the Proposed Action" chapter; however, some mitigating measures would apply to all areas proposed for development or visitor use in the park and are described below.

Because the documentation and evaluation of all the park's landscapes and cultural sites is currently incomplete, these resources would be treated as if they were eligible for inclusion on the National Register of Historic Places unless determined otherwise.

It should be noted that although the entire park is listed on the National Register of Historic Places for its role in American history, and the Pecos Pueblo / mission ruins complex, Kozlowski's Stage Stop, and Pigeon's Ranch are national historic landmarks, the majority of the park's resources and landscapes have yet to be evaluated for national register eligibility.

The locations, significance, and integrity of sites and landscape features would be documented and evaluated before trails, roads, parking, or other features were developed. Avoidance would be the primary strategy employed to reduce or prevent direct impacts on these resources. Where avoidance was impossible or infeasible because of factors like environmental constraints or excessive costs, mitigating measures such as data retrieval or archeological monitoring would be developed to ensure that no adverse effects occurred as a direct result of development.

METHODS FOR ANALYZING IMPACTS

Impacts on Cultural Resources

Existing inventories for areas proposed for development were checked to identify cultural resources.

Some sites have not yet been evaluated for national register eligibility. However, for the purposes of this document, all potentially affected sites are treated as eligible. Maps showing the locations of archeological sites, known cultural landscape resources, historic structures, and other cultural resources were compared with the development and visitor activity plans. The resulting information was incorporated into the planning process and is reflected in the impact analysis. The effects of proposed alternatives on cultural resources were assessed according to the advisory council's procedures (36 CFR 800.9) and preliminary conclusions regarding effects are included in appendix F. As more detailed site plans were prepared in the future, further investigations, analysis, and consultation would be conducted.

METHODS FOR ANALYZING IMPACTS

Impacts on Natural Resources

Fish and Wildlife Service wetland maps and federal emergency floodplain maps were consulted when planning for proposed development and visitor use areas. The U.S. Army Corps of Engineers also conducted a survey and delineated a jurisdictional wetland near the current visitor center. Informal consultation was conducted with the Fish and Wildlife Service and the state of New Mexico. All sites proposed for development were surveyed by qualified botanists and wildlife biologists for federally listed and state-listed threatened, endangered, and category 2 species. General descriptions of the natural environment were also completed for all areas proposed for development to assess impacts on vegetation and wildlife. Consultation was conducted with the Soil Conservation Service to identify prime and unique farmlands in areas proposed for development and use. Proposed development and construction activities were evaluated for their potential to affect water resources.

Impacts on Scenic Resources

The alternatives are evaluated by considering the impacts of the proposed developments and actions on the park scenery. Each proposed development area was selected based on an analysis of the viewshed from key-vantage points in the park. Views were analyzed by conducting a computer analysis in the Forked Lightning Ranch area from the Pecos Pueblo / mission ruins complex, Kozlowski's Stage Stop, the ranch house, and the Gateway overlook. Key vantage points were also identified and analyzed in the Glorieta unit.

Designs that are sensitive to the historic and natural features of the landscape would be used to ensure that new facilities would not intrude on the viewshed and the cultural landscape or diminish its integrity and national register values.

To avoid negative impacts on park resources, plans for structural rehabilitation and adaptive use, removal of structures, or data retrieval would be developed in consultation with the New Mexico state historic preservation officer, with appropriate review by the Advisory Council on Historic Preservation. Modifications to existing facilities or designs would be compatible with the park's historic structures and cultural landscape. Rehabilitation or adaptive use of structures would be done in a way that would preserve the characteristics that make the structures eligible for the national register and would follow the Secretary of the Interior's *Standards and Guidelines for Archeology and Historic Preservation*.

TRADITIONAL USE GROUPS

Consultation has indicated that American Indians and hispanics who claim ancestral ties to the pueblo and mission and who use lands inside the park would not be adversely affected by development and actions proposed in the alternatives. Consultation with associated groups would continue to protect and preserve significant resources in the park.

CAVE RESOURCES

Closing all cave resources in the park would have a beneficial effect by protecting cave resources until inventories and analyses were conducted and a cave management plan was developed.

WATER RESOURCES

Further studies would be conducted on the park's fish populations to detect water pollution problems that might affect fish. Surveys would be conducted in cooperation with the New Mexico Environmental Department, the New Mexico Game and Fish Department, the U.S. Environmental Protection Agency, the U.S. Forest Service, the U.S. Fish and Wildlife Service, and the village of Pecos. These surveys would prevent significant adverse affects on the overall health of resident fish populations.

Continuing to monitor the water quality of the Pecos River in the park would have a beneficial impact on water resources and the health of the aquatic system by providing information to prevent adverse impacts.

Glorieta Creek would continue to be adversely affected by heavy nutrient loading from unknown sources outside the park. The park would work with owners of nearby property to address this issue.

Monitoring water quality on Gallisteo Creek would have a beneficial affect by providing critical baseline data to use in assessing impacts on this resource from outside development. This data would be used to recommend stronger controls of Gallisteo Creek water quality.

Controlling erosion in the Glorieta Creek watershed would enhance water quality and have a beneficial effect on water resources and aquatic life. Monitoring the location, size, and cause of gullies and headcuts would have a beneficial impact. Stabilizing soils in the park would help control erosion and sediment in the creeks and river.

ACCESSIBILITY

Provisions made to accommodate the needs of special populations, including hardened and widened trails and accessible entrances to park facilities, would not significantly adversely affect natural and cultural resources. Changes to historic structures would be completed by a historical architect under consultation with the state historic preservation officer to ensure that no adverse effects would occur on the character-defining features of the structure and that the *Secretary of Interior's Standards and Guidelines for Archeology and Historic Preservation* were met to the greatest degree possible.

VISITOR USE

By not providing for and/or allowing overnight use in the park, no adverse impacts on natural and cultural resources would occur. By encouraging private entities outside the park to provide this service, economic benefits to the village of Pecos and other areas might occur. Some temporary adverse impacts might occur on vegetation because of overnight use associated with special events permitted by the superintendent. Areas for this use would continue to be carefully chosen to avoid significant park resources.

FISHING

Restrictions on fishing such as barbless hooks, catch and release, and permitting regulations would reduce adverse impacts on the sensitive riparian habitat and cultural resources in the river area and offer a quality environment and experience for those fishing. Excessive trampling of vegetation and overcrowding would be avoided, and potential threatened and endangered fish species would be protected.

DEVELOPMENT OF ADJACENT LAND AND SCENIC RESOURCES

Land use changes and increases in commuter traffic might result in the sale of nearby agricultural land and other rural properties for development. Developing areas that surround the park could significantly compromise the cultural and natural landscape within the viewshed, especially at Glorieta Mesa. The expansion of potential commercial and

METHODS FOR ANALYZING IMPACTS

Impacts on the Socioeconomic Environment

Impacts on visitors and nearby residents were determined by analyzing the alternatives and looking at the opportunities they provided for people to understand the significance of Pecos National Historical Park. The alternatives were also examined based on their ability to provide programs and facilities for a wide variety of people, including visitors with disabilities.

Impacts on the local and regional economy were forecast by examining potential short- and long-term consequences from the alternatives that would have beneficial or adverse effects.

residential development in Santa Fe and San Miguel Counties and increases in commuter traffic would also adversely affect wildlife populations and local air and water quality. Views of and from the park could also be diminished by urban haze if commuter traffic and burning from woodstoves continued to increase in the area. Greater residential development near the park boundary could potentially affect groundwater and water quality in Glorieta Creek and the Pecos River.

Cooperation with all state, county, and private development efforts to find creative solutions to address the effects of nearby development on park values would reduce adverse effects on park resources.

New facilities in the park would be designed to sensitively blend in with the park surroundings, reducing adverse impacts to the greatest degree possible. Carefully choosing sites would further minimize adverse impacts by screening structures with topography and vegetation.

AIR QUALITY

Under the Clean Air Act conformity requirements, federal actions must conform to all applicable state implementation plan requirements and purposes, and these actions must not cause or contribute to any violation of national ambient air quality standards. The conformity regulations addressed only those areas that are not in attainment with the national ambient air quality standards CFR 93, 58, FR 62215, Nov. 24, 1993; amended at 58 FR 63247, Nov. 30, 1993. Pecos National Historical Park is not designated as such an area. The temporary, minor impacts associated with construction and small projected increases in visitation would not cause or contribute to a violation of the national standards for any criteria pollutant and state implementation plan.

LANDOWNERS

Acquisition of lands from willing sellers would not result in an adverse effect. All landowners would be fairly compensated for their lands.

NEW MEXICO HIGHWAY 50

Widening NM 50 through the Glorieta unit and the associated traffic, noise, and fumes would adversely affect a historic structure, potential archeological resources, and the cultural landscape. The combined impacts of this action would threaten the overall integrity of this historic site and would eliminate the opportunity for the National Park Service to effectively interpret the significance of this site to the public. Soils, vegetation, and Glorieta Creek would also be adversely affected during construction and when the highway was operational.

The New Mexico Highway Department is studying alternative locations for NM 50 that would enable it to be removed from the center of the Glorieta unit. The National Park Service supports relocation of the highway from its present location; however, assessing the impacts of those relocation alternatives is beyond the scope of this plan. The various alternatives for relocation and impact analysis is being conducted by the New Mexico Highway Department and the Federal Highway Administration.

NEW MEXICO HIGHWAY 63

Since none of the archeological sites along the NM 63 right-of-way were found to be eligible for listing on the national register, raising and realigning the road is not expected to adversely affect significant archeological resources. However, further surveys and mitigation of archeological resources by the New Mexico Department of Transportation might be necessary, depending on future plans for other sections of the road. Recording and archeological monitoring would reduce the potential for adverse impacts on the Santa Fe Trail ruts during highway construction.

Constructing retaining walls, placing riprap, and widening, raising, and realigning NM 63 near Kozlowski's Stage Stop would adversely affect the cultural landscape. This new construction would increase the size and mass of the road, which would tend to visually diminish the nearby historic stage stop structures and change the character of the surrounding landscape. These changes would be partially offset by several other factors. The original transportation corridor, which has already had numerous changes through time, would be retained, and the raised road would allow a better view of the historic scene from the highway.

Straightening NM 63, relocating the bridge near Kozlowski's, and elevating a portion of the road near Kozlowski's would have a beneficial effect on the public by removing an unsafe condition. Construction near Glorieta Creek would temporarily adversely affect water quality and the riparian habitat. Sediment control measures would be required to avoid significant adverse impacts. Raising the road might increase traffic noise from present levels. Significant adverse impacts on vegetation and wildlife would not be expected.

An environmental assessment was prepared by the state of New Mexico to analyze the impacts of this construction. The National Park Service has submitted its comments and concerns to the state.

PECOS UNIT
ALTERNATIVE A

IMPACTS FROM PECOS UNIT ALTERNATIVES

PECOS UNIT ALTERNATIVE A (NO ACTION)

■ CULTURAL ENVIRONMENT

Impacts on Archeological Resources, Including Collections

Under Pecos unit alternative A no direct negative impacts on archeological resources would be expected. Because the area has been previously disturbed, and because appropriate mitigation strategies would be accomplished before construction, the replacement of trailers with housing units would not be expected to directly affect significant resources. The new low-volume gravel access road into the ranch house area would generally follow existing ranch roads, and its design would avoid significant resources.

The maintenance facility would be located in a previously disturbed area east of Kozlowski's, where the likelihood of encountering archeological resources would be low. Adaptive use of the ranch structures, including Kozlowski's Stage Stop, would not be expected to affect archeological resources.

Indirect negative effects would be minor and would generally be limited to accidental trampling of sites and relic collecting in the original monument portion of the park. Because the ranch area would be closed to visitation, no significant indirect impacts on archeological resources would be expected in this area. Park law enforcement activities, research, monitoring, and interpretation would continue to help mitigate potential impacts on resources in outlying areas.

Reuse of the administrative facilities for curatorial treatment and storage would continue to provide marginally adequate care for the park's collections.

Impacts on Historic Sites and Structures

Adaptive use of the ranch house for administrative facilities, the stage stop for park operations, and the casita for park housing would continue to help preserve these structures through ongoing upkeep and maintenance and would fulfill legal compliance requirements regarding adaptive use of historic structures in preference to new construction. Such use would result in positive effects on these historic resources. Ongoing adaptive use of existing ranch structures has been preceded by consultation with the New Mexico state historic preservation officer. Consultation would continue in the future to ensure that such use would not diminish the significant qualities of the buildings.

PECOS UNIT
ALTERNATIVE A

Impacts on Cultural Landscapes

The existing administrative facilities would continue to visually intrude on the cultural landscape, resulting in an adverse impact on the area surrounding the Pecos Pueblo / mission ruins complex. Constructing the maintenance facility would adversely affect the cultural landscape near the stage stop by introducing contemporary facilities and operations in the historic scene. Even though maintenance functions have historically been located in the general area (for example, ranching operations at Kozlowski's), the proposed development would be incompatible with the cultural landscape because it would introduce a modern development that would be visible from historic pasture areas such as the Trap pasture. It would also be incompatible because it would be associated with NPS management, not with the continuum of historic use that is the primary subject of park interpretation. The degree of impact would depend on the design, scale, materials, color, and texture of this new facility, in addition to new roads, parking areas, and parked equipment.

The intrusion would be partially mitigated through careful design and vegetation screening. Continued use of the ranch house, the casita, and Kozlowski's would be compatible with the area's historic values and would not adversely affect the cultural landscape near these structures. Constructing the gravel road into the ranch house area would modify the cultural landscape, but it would not have an adverse effect because the existing road is a character-defining cultural landscape feature, the gravel surfacing would blend unobtrusively into the surrounding landscape, and the low level of traffic would not be intrusive.

Cumulative Impacts

Lack of funding and staff make it difficult to provide prompt maintenance, adequate stabilization of structures, or accurate documentation of past conservation activities at the ruins. Isolated ruins on the ranch might continue to deteriorate. When these concerns are combined with continuing visitor activities and the impacts of natural forces such as insects and rodents, rain, snow, wind, and freezing temperatures, negative cumulative impacts might occur on both prehistoric and historic features over the entire park.

Conclusion

The park's archeological and architectural resources would not be directly impacted by construction activities. Historic structures would benefit from adaptive use. Building a maintenance complex near the stage stop would adversely impact the cultural landscape. The existing administrative facilities would continue to intrude on the visitor experience and historic scene at the ruins. Limited minor impacts would be expected from continuing existing management in the rest of the park.

PECOS UNIT
ALTERNATIVE A

NATURAL ENVIRONMENT

Impacts on Floodplains, Wetlands, and Riparian Habitat

Wetlands or floodplains would not be affected under this alternative because all development would be sited to avoid adversely affecting these resources. Constructing a new maintenance facility near Kozlowski's Stage Stop and a new administrative access road might adversely affect riparian areas from runoff during storms. These facilities would be designed to mitigate these effects.

Impacts on Vegetation and Wildlife

No additional impacts on vegetation or wildlife would occur under alternative A. Constructing a new maintenance facility in a disturbed area near Kozlowski's Stage Stop would not adversely affect vegetation or wildlife. About 0.25 acre of habitat would be replaced by development. The new 2.25-mile gravel administrative access road would follow an existing ranch road where feasible, which would minimize adverse impacts.

Impacts on Threatened, Endangered, or Sensitive Species

No known endangered, threatened, or state-listed sensitive species are located in existing visitor use and development areas; therefore, no adverse impacts would occur under this alternative. If any sensitive species were found in the future, new development would avoid them.

Impacts on Water Resources

Erosion would continue in the Glorieta Creek watershed. Gullies and headcuts initiated by past erosion in Glorieta Creek would continue to gradually advance up tributary watersheds, adversely affecting water quality.

Constructing a new maintenance facility near Kozlowski's Stage Stop and a new administrative access road might adversely affect water quality from runoff during storms. These facilities would be designed to mitigate these effects.

Impacts on Prime and Unique Farmlands

No adverse impacts would occur on soils that are designated as prime and unique farmlands.

PECOS UNIT
ALTERNATIVE A

Cumulative Impacts

Wildlife and water quality could be adversely impacted by the development of habitat areas outside the park.

Conclusion

There would be no significant adverse impacts on threatened or endangered species, wetlands, floodplains, vegetation, prime and unique farmlands, or wildlife as a result of this alternative. Erosion of Glorieta Creek would continue, increasing sedimentation and adversely affecting water quality.

SCENIC ENVIRONMENT

Impacts on Scenic Resources

Impacts on scenic resources in the park would be minimal because there would be little new construction. The existing administrative facilities at the Pecos Pueblo / mission ruins complex would remain in this alternative. These facilities would continue to adversely impact the scene surrounding the Pecos Pueblo / mission ruins complex. Constructing a maintenance facility near Kozlowski's Stage Stop would have a minimal effect on scenic quality.

Cumulative Impacts

Continued development outside the park could adversely affect the scenic resources in the park.

Conclusion

The administrative facilities near the Pecos Pueblo / mission ruins complex would continue to significantly adversely impact the cultural landscape. No other significant adverse impacts would result from this alternative. Scenic resources in the park could be adversely impacted by development outside the park.

PECOS UNIT
ALTERNATIVE A

SOCIOECONOMIC ENVIRONMENT

Impacts on Visitors

The visitor experience would remain basically the same because the recent park acquisitions would remain closed to visitors, leaving only a small portion of the park open. As a result, legislative requirements to provide for visitor enjoyment of park resources would not be fulfilled.

Impacts on Local Residents

Local residents of the village of Pecos and other nearby areas would not experience any change in existing conditions as a result of this alternative. The park would remain closed to fishing, adversely affecting those residents who wanted to fish along the Pecos River in the park.

Impacts on the Local Economy

There would be no new construction of visitor facilities and no expansion of visitor services under this alternative, so no additional economic benefits such as additional jobs would be expected to accrue to the local economy. Visitor expenditures in the surrounding area would continue at present levels because there would be no additional developments such as trails or educational facilities to encourage visitors to stay longer.

Cumulative Impacts

No cumulative impacts would occur as a result of this alternative.

Conclusion

No significant adverse impacts would occur on local residents or the local economy as a result of this alternative. Local residents would continue to be denied permission to fish the Pecos River on park land. The visitor experience would be adversely affected because only a small portion of the park would be open to visitation, and the National Park Service would not fulfill its goal to provide for visitor enjoyment.

PECOS UNIT ALTERNATIVE B (PROPOSED ACTION)

PECOS UNIT ALTERNATIVE B

■ CULTURAL ENVIRONMENT

Impacts on Archeological Resources, Including Collections

No direct adverse impacts on archeological resources would be expected under the proposed action (see appendix F). Expanding the parking area and visitor center, constructing a new limited access road and new facilities at the northern boundary, reconfiguring the ruins trail, replacing employee housing, developing facilities at Kozlowski's Stage Stop, and adaptively using the ranch complex would involve careful design and implementation steps to avoid directly impacting archeological resources, including Santa Fe Trail ruts.

The same precautions would be taken when developing new trails throughout the park, improving existing ranch roads, and constructing a new footbridge. As previously stated, the route of the proposed access road into Kozlowski's has been surveyed, and no significant cultural resources would be affected by construction. Maintaining open pasture areas would be accomplished in a manner that would not damage archeological resources.

Constructing visitor facilities at the Gateway overlook is expected to have only a minimal direct effect on cultural resources. Part of this area has been previously disturbed by roads and quarry activities, and the majority of nearby archeological sites could be avoided during construction. Stabilizing and interpreting the Hispanic frontier site(s) and the mill site would help reduce indirect impacts that might occur from increased visitor use of this area.

Few archeological sites have been documented in the mountainous areas east of the Pecos River. Therefore, direct impacts on cultural resources from trail construction or indirect impacts from visitor use in this area would not be expected. Some indirect impacts from visitation on archeological resources along the river might occur, but visitor education, controls on fishing, law enforcement patrols, and design of trails would minimize these impacts.

The present administrative complex was constructed in an area now known to contain archeological resources. Removing the existing structures and revegetating the area would be carefully accomplished to ensure that no direct impacts would occur on these resources. Relocating the picnic area away from the ruins and removing the ruins preservation storage, equipment, and work areas to the former trailer area would not impact significant archeological resources. Special care would be taken to help ensure that road realignment, trails, and visitor facilities would not destroy traces of the Santa Fe Trail or damage other archeological resources.

Through a combined program of good facility design and visitor management, increased visitor access to previously restricted areas of the ranch would not be expected to result in significant negative direct or indirect impacts on cultural resources. Visitor access would be limited to developed sites and trails and to special guided tours in sensitive areas.

PECOS UNIT
ALTERNATIVE B

Constructing new curatorial facilities would significantly improve the safety and preservation treatment of the park's collections.

Impacts on Historic Sites and Structures

Buildings at the stage stop, the ranch house, and the casita would be adaptively used. This use would benefit these structures by ensuring that they received continued regular maintenance and prompt response to potential structural deterioration.

Although it is not historic, the Fogelson visitor center's southwestern design is complementary to the area's historic qualities. Appropriate designs and materials would be used in additions or modifications to this building to help avoid adverse effects on its appearance and architectural integrity.

Impacts on Cultural Landscapes

As stated above, the Fogelson visitor center complements the area's historic qualities. The building was originally sited to avoid intruding on the nearby Pecos Pueblo / mission ruins complex, and the additions to the visitor center and parking would be compatible with the surrounding cultural landscape to avoid adverse impacts. The existing administrative structure, a number of modern outbuildings, and a picnic area adversely affect views of the valley when looking from the Pecos Pueblo / mission ruins complex. Removing these structures and carefully revegetating the area with native plants would have a beneficial effect on the surrounding cultural landscape. These structures would be documented before removal. Segments of the new access road from the visitor center to the Pecos Pueblo / mission ruins complex might intrude on the cultural landscape, but this effect would likely be minor.

Because the new gravel access road to the ranch house would follow an existing ranch road, it would help preserve a character-defining feature of the cultural landscape and continue the historic use. Road access to the visitor staging area near Kozlowski's Stage Stop would also follow historic ranch roads. Using historic roads for visitor access would have a beneficial impact on the cultural landscape.

The one-way bridge across Glorieta Creek would be stabilized and maintained for pedestrian use to the ranch house. This would be a beneficial impact because it would preserve a character-defining feature of the cultural landscape.

The Colonias road dates back to at least the late 1800s and served as an early transportation link between the communities of Pecos and Colonias. Converting the Colonias bridge to a footbridge and using the historic route as a pedestrian trail would help continue this historic use. Design and construction of the footbridge and trail would be carefully planned to avoid any adverse effects on the structure or the historic road.

PECOS UNIT
ALTERNATIVE B

New facilities such as comfort stations and parking lots could intrude on the cultural landscape and impact its character-defining features. However, a maintenance storage area near the stage stop would not adversely impact the surrounding cultural landscape because it would not be visible from overlooks, roads, or historic areas. Because of the proximity of modern residential and commercial development in the village of Pecos, constructing new facilities at the north end of the park would not be expected to have an adverse effect on the cultural landscape..

The cultural landscape would be preserved in part by maintaining open pastures. Reusing existing roads would help reduce impacts associated with building new roads. The topography around the Gateway overlook has been previously disturbed; this would allow for facilities to be built where they would not intrude on the cultural landscape.

Mitigating measures would minimize direct negative impacts on significant character-defining landscape features. Recommendations for ongoing preservation and interpretation would be contained in an approved cultural landscape report. Guidance from this document would help minimize direct and indirect impacts on the cultural landscape. Until the cultural landscape report was completed and approved, a cultural landscape overview would provide interim guidance for management.

Cumulative Impacts

The historic use of ranch lands has been limited primarily to stock grazing, with some development of roads and structures. Because of the narrow range and low occurrence of uses and users, nonrenewable archeological resources on the newly acquired ranch lands are generally in excellent condition.

Several factors combine to increase cumulative impacts on cultural resources. Increased visitation might result in the trampling of sites, displacement of surface artifacts, and changes in vegetation. Potential relic hunting and vandalism would also be more likely with increased visitation. The loss of diagnostic artifacts limits the assortment of remaining materials and diminishes their scientific value as part of a larger regional database. These cumulative impacts would generally be mitigated by documenting sites before opening them to visitation and by managing visitor activities through interpretation, law enforcement, and facility design.

Conclusion

Adverse effects on the ruins, archeological resources, the Fogelson visitor center, the ranch facilities, or cultural landscapes would be negated by avoiding significant sites and features, using sensitive designs, and developing and implementing appropriate mitigation strategies. Removing intrusive facilities from the ruins area would have a positive effect on the cultural landscape. Constructing new curatorial facilities and adaptively using historic structures at the ranch house and stage stop would benefit the park's historic properties and cultural landscape.

PECOS UNIT
ALTERNATIVE B

NATURAL ENVIRONMENT

Impacts on Floodplains, Wetlands, and Riparian Habitat

There would be no adverse impacts on floodplains and wetlands as a result of this alternative because development would be sited to avoid these areas. The parking lot near the Fogelson visitor center would be expanded in such a way that the nearby wetland would be avoided by carefully channeling runoff from the parking area away from the wetland. Controlled fishing and hiking in the riparian habitat near the Pecos River would not adversely affect this area. Controlling the numbers of people allowed to fish and requiring all visitors to remain on established trails would minimize adverse effects on this habitat.

Restoring the Colonias bridge as a footbridge would be exempted from compliance with EO 11988. Temporary impacts would occur during construction; however, there would be no long-term adverse impacts associated with this bridge.

Constructing a new footbridge across the Pecos River near the ranch house and a 0.25-mile trail along the river would also be exempt from compliance with EO 11988. This bridge would not adversely affect the riparian resources. Staying on established trails would be strictly enforced to protect the fragile resources in this area.

Impacts on Vegetation and Wildlife

Enlarging the present parking area near the Fogelson visitor center by 0.75 acre would not have a significant adverse effect on vegetation or wildlife in the area. Some small mammal species might be displaced from the site; however, it is doubtful that these animals would be killed or leave the park. Confining visitor use to the trail would protect vegetation from trampling. Three acres of land would be restored by removing the administrative building, maintenance area, curatorial facilities, and housing. These areas would be replanted with native vegetation to enhance wildlife habitat. Reconfiguring the trail from the Pecos Pueblo / mission ruins complex to the Fogelson visitor center would have no effect on vegetation or wildlife. Constructing a trail from the visitor center to Kozlowski's Stage Stop would not significantly affect vegetation or wildlife in the area. Building a footbridge across Glorieta Creek near Kozlowski's would prevent visitors from trampling the riparian area. Relocating the existing picnic area to the Fogelson visitor center would have a minimal adverse effect on vegetation and wildlife.

Constructing an orientation site, including parking, restrooms, and picnic tables near Kozlowski's, would remove 1 acre but would not adversely impact vegetation or wildlife in the area. Some small mammal species might be displaced; however, it is doubtful that these animals would be killed.

Constructing a trail to provide access for visitors to view the Santa Fe Trail ruts would have an insignificant adverse impact on vegetation and wildlife.

PECOS UNIT
ALTERNATIVE B

Constructing a 1.5-mile trail to the Gateway overlook from the trailhead at Kozlowski's Stage Stop would not adversely impact vegetation or wildlife. The trail would be constructed on top of or along existing ranch roads, eliminating the need to disturb new areas. State-of-the-art restroom facilities and a picnic area would disturb 0.25 acre of vegetation; however, this would not be a significant adverse impact. Minimal disturbance might occur on wildlife species because this area has previously not been open to the public. Constructing 10 miles of trail on or along existing informal roads and trails on the east side of Pecos River would affect 7 acres of vegetation. However, it is not anticipated that this would be a significant impact due to careful selection of sites. Once trails were flagged, surveys would be conducted to ensure that no significant habitat or vegetation would be disturbed.

Constructing a 0.75-mile trail from Kozlowski's to the ranch house would not adversely affect vegetation or wildlife because it would be constructed along previously disturbed ground.

Maintaining 400 acres of pastureland by fire or manual cutting would not adversely affect the current vegetation or wildlife in the area. This land has been maintained as pastureland since before the establishment of the Pecos Pueblo, and although vegetation patterns are not natural, it is unlikely that continued maintenance of 400 acres would have an adverse impact. Restoration or allowing 2,000 acres of former pastureland to return to native vegetation types and patterns would have a beneficial effect on the overall health of the park. Meadow-dwelling wildlife species would benefit from this action.

Constructing a new maintenance and administrative facility and employee housing in the northern part of the park on approximately 4 acres would not have a significant adverse impact on wildlife or vegetation resources. Wildlife would be displaced from this area but would likely move to similar habitat elsewhere in the park. Restoring 3 acres of similar habitat near the Pecos Pueblo / mission ruins complex would offset this disturbance.

Impacts on Threatened, Endangered, or Sensitive Species

All development sites were surveyed for the presence of any federal category 2 species and for any federal or state-listed threatened or endangered species. No threatened, endangered, or sensitive species were located on any of the sites; therefore, development would not adversely affect these species. Future development of the trail would avoid potential threatened or endangered species habitat.

Impacts on Water Resources

Developing Kozlowski's Stage Stop as a visitor use area might increase the potential for adverse impacts on Glorieta Creek. Sedimentation and erosion controls would be implemented during construction to avoid sediment from entering the creek; however, pollutants from the parking area could be washed into the creek and adversely affect water quality.

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Replacing the footbridge across the Pecos River and constructing a 0.5-mile interpretive trail along the river would require sediment and erosion control devices during construction to prevent adverse impacts on the Pecos River. No adverse impacts on water quality or resources would be likely to occur after construction.

Glorieta Creek would continue to be adversely affected by heavy nutrient loading from unknown sources outside the park. The park would work with owners of nearby properties to address this issue.

Controlling erosion in the Glorieta Creek watershed would enhance water quality and have a beneficial effect on water resources and aquatic life. Monitoring the location, size, and cause of gullies and headcuts would have a beneficial impact. Stabilizing soils in the park would help control erosion and sediment in the creeks and river.

Impacts on Prime and Unique Farmlands

No development is proposed on prime and unique farmlands.

Cumulative Impacts

Developments inside and outside the park might have a cumulative adverse impact on wildlife habitat. There would be no other cumulative impacts on natural resources as a result of this alternative.

Conclusion

No significant adverse impacts on natural resources would result from implementing alternative B. Over time the park would be restored to more natural conditions, which would have a beneficial effect on the ecosystem.

SCENIC ENVIRONMENT

Impacts on Scenic Resources

Most of the proposed developments would not be seen from high vantage points that the public would have access to. Locating the park administrative and operations facilities near the northern boundary would have an overall beneficial effect on visual quality. The northern location would place facilities near existing buildings and structures from the village of Pecos. This would create a closer relationship of park facilities to the village's visual context, minimizing negative visual intrusions on the natural and cultural landscape further south in the park. The existing administrative facilities at the Pecos Pueblo / mission ruins complex would be removed in conjunction with the above development. The remaining disturbed site would be revegetated, which would have a beneficial effect on the scenic

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quality surrounding the complex. While new developments near Kozlowski's Stage Stop would not adversely impact critical views from key vantage points, it would introduce contemporary development into the overall scene associated with the ranch.

An administrative road from the northern boundary to the ranch house would negatively impact the view east from the Pecos Pueblo / mission ruins complex over the short term. The piñon/juniper vegetation would eventually screen this road as the plant community matured.

The ranch house and casita would be adaptively used for resource education and park housing, which would have minimal adverse impacts on park scenery. Exterior modifications would be insignificant.

Expanded facilities at the Fogelson visitor center would be designed to blend visually with existing facilities minimizing adverse visual impacts.

Constructing new facilities would create short-term adverse effects on the visual quality of the park. Construction equipment, clearing and grading operations, and dust would create temporary adverse impacts.

Cumulative Impacts

Development in the park, combined with development of private lands outside the park, would cumulatively adversely affect scenic resources in the park.

Conclusion

This alternative would preserve most of the existing visual quality of the park. New facilities would have adverse impacts on the viewshed at selected areas. However, the visual quality of the Pecos Pueblo / mission ruins complex would be enhanced. The quality of the scenery outside the park might or might not have significant adverse impacts in the future, depending on the success of the National Park Service in working with owners of nearby lands.

■ SOCIOECONOMIC ENVIRONMENT

Impacts on Visitors

Under alternative B visitors would have an opportunity to better understand and visualize the historic significance of Pecos National Historical Park. This would be accomplished by offering trail access to all the important cultural features in the park and by providing quality interpretation at these sites. The lack of automobile access by visitors to sites such as the Gateway overlook might limit the availability of the experience, thereby adversely affecting it.

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However, quality interpretation of the entire park would be available at the Fogelson visitor center to serve the needs of all visitors, regardless of ability.

Rehabilitating the ranch house as a resource education facility would have a beneficial impact on schools and other groups. Increased opportunities for learning about the natural and cultural resources of the park would have a beneficial effect on the public.

Impacts on Local Residents

A broader range of visitor experiences would be provided in this alternative, which would have a beneficial effect. However, local residents might believe that restrictions on fishing with limited access would have an adverse effect.

Building a resource education facility would have a positive effect on the community by providing new educational opportunities for schools and community groups.

Impacts on the Local Economy

Some short-term positive economic benefits would accrue to the local and regional economy because of new construction and development at the park. With a variety of opportunities to experience the park and a number of hiking trails, visitors probably would stay longer. This would increase the amount of tourist dollars spent locally.

Cumulative Impacts

Increased visitation and length of stay could mean increased tourist dollars spent in the area. No other cumulative impacts were identified for the socioeconomic environment.

Conclusion

This alternative would generally have beneficial effects on the visitor experience because visitors would be able to experience the park much like historic peoples.

The village of Pecos and other nearby communities would experience minor economic benefits from new park facilities. Providing a resource education facility for the community and local school groups would have a beneficial effect by providing new educational opportunities.

PECOS UNIT ALTERNATIVE C

■ CULTURAL ENVIRONMENT

Impacts on Archeological Resources, Including Collections

Under alternative C impacts on archeological resources near the Pecos Pueblo / mission ruins complex would be virtually the same as those described under the proposed action (see appendix F). Constructing a new resource education center at the north end of the park would not affect significant archeological resources. However, because of the size of the new facilities at Kozlowski's and their proximity to the historic stage stop, there would be a greater likelihood of disturbing archeological resources under this alternative.

Avoiding sites and using appropriate mitigating measures would help ensure that building a new road into the ranch house and a new bridge would not adversely impact the area's scattered archeological resources.

Mitigating measures under alternative C would help reduce negative impacts on archeological sites from constructing a gravel road to the Gateway overlook, which would increase visitation in this area. As in the proposed action, avoiding sites would help ensure that developing a road into this area would not adversely impact archeological resources, including the Santa Fe Trail ruts. As previously described, the proposed route of the new access road into Kozlowski's has been surveyed, and no significant cultural resources would be affected by road construction.

Site avoidance by design and developing mitigating measures would reduce the potential for adverse impacts on archeological resources near the ranch house addition.

Increased visitor education, sensitive trail design, and law enforcement measures would help minimize negative impacts on sites along new trails in the mountainous areas east of the river. Documenting and stabilizing the mill site and providing interpretation to visitors would reduce the potential for vandalism and relic hunting.

Other impacts associated with developing trails, modifying the Colonias bridge, and interpreting the frontier site would be similar to those described under the proposed action.

Impacts on Historic Sites and Structures

Impacts of this alternative on historic resources near the Pecos Pueblo / mission ruins complex would be similar to those described under the proposed action. No historic resources would be affected by constructing a new resource education center at the northern edge of the park.

While the original structures at Kozlowski's Stage Stop would require modification to accommodate visitors and provide for their safety, this would not be an adverse effect on this historic complex. In fact, stabilization and adaptive use would be a positive step toward the long-term preservation of the Kozlowski complex.

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Adaptively using the ranch house and surrounding facilities for administrative use and park housing would not be an adverse effect because this use would facilitate the preservation of this complex and meet requirements for reuse of historic structures. However, because the ranch house was not specifically designed to serve these functions, modifications could affect more historic fabric than in other alternatives. Sensitive design and careful choice of materials and colors would help make the new 3,000-square-foot addition compatible with the historic complex and reduce (but not eliminate) the adverse impacts of construction.

Impacts on Cultural Landscapes

All of the existing structures at Kozlowski's Stage Stop would be maintained, and care would be taken to ensure that no important elements of the cultural landscape were lost. The proposed maintenance facility and its location would be incompatible with the surrounding cultural landscape, resulting in adverse impacts.

Although existing roads would be used wherever possible, and road designs would be sensitive to the landscape, there would be negative visual intrusions from increased vehicle traffic from Kozlowski's to the Gateway overlook. Sensitive design would also be used to screen the new road to the ranch house from view wherever possible, and the road would follow existing ranch roads for most of its length, helping to minimize impacts on the cultural landscape. However, sections of the road would still be visible from other areas in the park and would intrude on the cultural landscape.

Cumulative Impacts

The cumulative impacts of alternative C on cultural resources would be similar to those described under the proposed action but could be accelerated because more visitors would be using previously restricted areas where access to historic sites would be improved.

Conclusion

Under this alternative more potential would exist for direct impacts from construction on archeological resources because of the size and nature of proposed developments. Indirect impacts from increased visitor use in previously restricted areas would require a higher level of protective measures. Constructing a roadway to the Gateway overlook area (and associated traffic) and building facilities near Kozlowski's Stage Stop would have an adverse impact on the cultural landscape. Constructing an addition to the ranch house would adversely affect its historic and architectural values and would have the potential to intrude on the cultural landscape. There also would be more potential for damage to sites important to traditional groups.

■ NATURAL ENVIRONMENT

PECOS UNIT
ALTERNATIVE C

Impacts on Floodplains, Wetlands, and Riparian Habitat

There would be no adverse impacts on floodplains and wetlands under this alternative. The expanded parking lot near the Fogelson visitor center would be constructed in such a manner that the nearby wetland would be avoided. Carefully channeling runoff from the parking area to keep it from draining into the wetland would avert adverse impacts. Allowing limited fishing and hiking in the riparian habitat near the Pecos River would not adversely affect this area. Controlling the number of people allowed to fish and requiring all visitors to remain on established trails would prevent adverse effects on this habitat.

Constructing a new bridge across Glorieta Creek to provide access to the ranch house and restoring the Colonias bridge as a footbridge are exempted from compliance with EO 11988. Temporary impacts would occur during construction; however, there would be no long-term adverse impacts associated with these bridges.

Constructing a new footbridge across the Pecos River near the ranch house and a 0.5-mile trail along the river would also be excepted from compliance with EO 11988. These projects would not adversely affect the riparian resources. Staying on established trails would be strictly enforced to protect the fragile resources in this area.

A trail along the bank of Glorieta Creek with views of the Santa Fe Trail ruts would provide visitors with opportunities to get near the water without trampling vegetation. This trail would not adversely impact the riparian area.

Constructing a new maintenance area between Kozlowski's and the ranch house might adversely affect the riparian area of Glorieta Creek. This facility would be outside the 500-year floodplain; however, runoff during storms could drain into the creek from this facility. Since maintenance areas typically use various contaminants and toxic materials, runoff from this area could contaminate the riparian system of the creek. The facility would be designed to avoid these impacts.

Impacts on Vegetation and Wildlife

Impacts on vegetation and wildlife associated with increased parking near the Fogelson visitor center would be the same as those described under the proposed action. Other impacts that would be the same as those described under the proposed action are those related to expanding the visitor center; reconfiguring the trail from the Pecos Pueblo / mission ruins complex to the visitor center; removing the administrative building, maintenance area, curatorial facilities, and housing; constructing a trail from the visitor center to Kozlowski's Stage Stop, constructing a footbridge across Glorieta Creek; and relocating the existing picnic area to the visitor center.

Impacts on vegetation and wildlife from providing parking, restrooms, a picnic area, and an orientation site at the visitor staging area near Kozlowski's Stage Stop would be the same as those described under the proposed action.

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Constructing a maintenance facility in a disturbed area near Kozlowski's Stage Stop would not adversely affect vegetation or wildlife.

Impacts on vegetation and wildlife from constructing state-of-the-art restroom facilities, a picnic area, and a 1.5-mile trail to the Gateway overlook along existing ranch roads would be the same as those described under the proposed action.

Constructing 10 miles of trail on the east side of the Pecos River would have the same impacts on wildlife and vegetation as those described under the proposed action.

Impacts on vegetation and wildlife from constructing a 0.75-mile trail from Kozlowski's Stage Stop to the ranch house along existing disturbed ground would be the same as those described under the proposed action.

Maintaining 400 acres of pastureland by fire or manual cutting and restoring or allowing 2,000 acres to return to native vegetation types and patterns would have the same impacts on vegetation and wildlife as those described under the proposed action.

Constructing 2 miles of roads would not disturb vegetation or wildlife because alignments would follow existing ranch roads as much as possible. Vegetation and wildlife would be adversely affected by increased noise from vehicles and by habitat fragmentation. The new roads would also increase the likelihood for animals to be hit by cars.

New roads would allow more people access throughout the park, which would likely result in an adverse impact on vegetation and wildlife from trampling and disturbance to wildlife species.

Constructing a 40-car parking lot and comfort stations at the Gateway overlook would disturb 1 acre of vegetation; however, this would not be an adverse effect since this is a previously disturbed area. Wildlife would be displaced from this site but would likely remain in the park.

Constructing housing where two trailers currently sit, as well as restoring the casita as employee housing, would not have adverse effects on vegetation or wildlife because these are previously disturbed sites.

Constructing a new resource education center at the northern boundary would change that area from undisturbed vegetation and wildlife habitat to developed; however, this would not have a significant adverse impact on wildlife or vegetation resources. Wildlife would be displaced from this area but would likely remain in the park.

Impacts on Threatened, Endangered or, Sensitive Species

All sites proposed for development were surveyed for the presence of any threatened, endangered, or sensitive species listed by state and federal agencies. No listed species were found on any of the sites; therefore, development

would not adversely affect threatened, endangered, or sensitive species. Trails would be aligned to avoid any potential threatened or endangered species habitat.

PECOS UNIT ALTERNATIVE C

Impacts on Water Resources

Developing Kozlowski's Stage Stop as a visitor use area and a park maintenance facility might increase the potential for adverse impacts on Glorieta Creek. Sedimentation and erosion controls would be implemented during construction to keep sediment from entering the creek; however, during operation, pollutants from the parking area and the maintenance facility could be washed into the creek and adversely affect water quality. The facility would be designed to avoid this impact.

Constructing a new 1.25-mile road to the ranch house, including a bridge over Glorieta Creek, would not adversely affect water resources. Sedimentation and erosion controls during construction would prevent water quality from being adversely impacted by sediment. During operations, pollutants from the road could be washed into the creek and adversely affect water quality.

Replacing the footbridge across the Pecos River and constructing a 0.5-mile interpretive trail along the river would require sediment and erosion control devices during construction to prevent adverse impacts on the Pecos River. No adverse impacts on water quality or resources would be likely to occur after construction.

Controlling erosion in the Glorieta Creek watershed, monitoring gullies and headcuts, and stabilizing soils in the park would have the same effects on water resources as those described in the proposed action.

Impacts on Prime and Unique Farmlands

No development would occur on prime and unique farmland.

Cumulative Impacts

Development outside the park could cumulatively impact wildlife habitat and water resources. There would be no other cumulative impacts on natural resources as a result of this alternative.

Conclusion

Improved vehicle access in the park and accommodating a greater number of visitors would likely result in more adverse impacts on natural resources than under the proposed action. Constructing a maintenance area between the ranch and Kozlowski's Stage Stop and an access road would increase the likelihood of adverse impacts on water resources and the riparian area of Glorieta Creek from stormwater runoff.

PECOS UNIT
ALTERNATIVE C

■ SCENIC ENVIRONMENT

Impacts on Scenic Resources

Developing a maintenance facility and visitor staging area near Kozlowski's would not impact critical viewsheds; however, the existing rural scene associated with the ranch would be affected. The new bridge crossing Glorieta Creek would require some vegetation clearing and would introduce a contemporary feature incompatible with the surrounding rural scene.

Adaptively using the ranch house and the associated increase in staffing, as well as visitor parking, would have moderate adverse impacts on the quality of the surrounding viewshed.

The natural environment at the Gateway overlook has been previously disturbed. Therefore, new development would have minimal additional adverse impacts on the visual scene.

Proposals at the visitor center, the Pecos Pueblo / mission ruins complex, and nearby lands would have the same impacts on the visual scene as those described under the proposed action.

Cumulative Impacts

Development under this alternative would adversely affect scenic resources when combined with development likely to take place outside park boundaries.

Conclusion

This alternative would preserve most of the existing visual quality of the park. New facilities would have adverse impacts on views of the landscape at selected areas. The quality of the scenery outside the park might be adversely impacted, depending on the success of the National Park Service in working with owners of nearby lands.

■ SOCIOECONOMIC ENVIRONMENT

Impacts on Visitors

Implementing alternative C would allow all visitors to experience more of the park's natural and cultural resources. The increased level of development in the park would interfere with the ability of visitors to view this area as a cultural landscape. The increased numbers of cars on park roads would create more noise, which would likely have an adverse effect on the visitor experience.

Visitor access to Kozlowski's Stage Stop would provide onsite interpretation of the Santa Fe Trail era, as well as access to a ranch building. This would have a beneficial effect on the visitor experience.

Constructing a maintenance facility between Kozlowski's and the ranch house and continuing to use the ranch house as the administrative center would adversely impact the visitor experience by siting operation functions in the middle of the park resources. Noise, administrative traffic, and views of parked cars at these facilities from the Gateway overlook would adversely affect the visitor experience.

Impacts on Local Residents

The impacts for this alternative would be similar as those described in the proposed action. Building a resource education facility would have a positive effect on the community by providing new educational opportunities to schools and other community groups.

Providing more vehicle access throughout the park might increase visitation, creating more traffic in the local area. This would create a minor adverse effect on local residents who now enjoy very little traffic. An average of 10–20 vehicles per day would be added to traffic volumes on local roads.

Impacts on the Local Economy

Some short-term positive economic benefits would accrue to the local and regional economy because of additional construction jobs and development at the park. With a variety of opportunities to experience the park and a number of hiking trails, visitors would probably stay longer. This would increase the amount of tourist dollars spent locally.

Cumulative Impacts

There would be no cumulative impacts on the socioeconomic environment as a result of this alternative.

Conclusion

This alternative would have a beneficial effect on visitors, but not as much as under the proposed action due to the increased number of roads and park operation facilities in the middle of the park.

Minor economic benefits would be realized in the village of Pecos and other nearby communities during construction of new park facilities.

PECOS UNIT ALTERNATIVE D

■ CULTURAL ENVIRONMENT

Impacts on Archeological Resources, Including Collections

Impacts under alternative D from redesigning trails, expanding the visitor center and parking, and removing noncompatible facilities at the Pecos Pueblo / mission ruins complex would be similar to those described under the proposed action (see appendix F). Negative impacts on archeological resources associated with the adaptive use of Kozlowski's Stage Stop and the ranch house would be mitigated by avoiding known archeological resources, using sensitive designs, and implementing appropriate mitigation strategies. Because of their scope and the amount of ground disturbance required, constructing new maintenance and administrative facilities near the stage stop, paved roads to the Gateway overlook, and a large visitor complex at the overlook would increase the potential for encountering archeological resources.

Because a new visitor center would be constructed at the Gateway overlook, it is likely that more visitors would use the surrounding area, resulting in increased potential for adverse impacts on archeological resources. Compared to the other alternatives, the Hispanic frontier and mill sites would require a higher level of attention, including thoroughly investigating, recording, and collecting surface materials, stabilizing features; and developing protective measures to help reduce adverse impacts. Guided tours to nearby archeological sites would help reduce indirect impacts on these sites. Visitor management and law enforcement would be used to help reduce adverse impacts on sites from unauthorized repeat visits.

Developing trails, ancillary roads, and bridges would have the same general effects on resources as the development under the proposed action.

Impacts on Historic Sites and Structures

Adaptively using the ranch house for resource education and the stage stop complex in a manner that would preserve the structures' architectural and historical integrity would help preserve these complexes by ensuring regular maintenance and upkeep.

Impacts on Cultural Landscapes

Impacts on the structures and landscape at Kozlowski's Stage Stop would be similar to those described under alternative C. Adaptively using the ranch house (including site restoration) would not have an adverse effect on the cultural landscape. The location and size of the new maintenance and administrative facility and its functions would be

incompatible with the surrounding cultural landscape, resulting in adverse impacts. At the Gateway overlook the amount of new development, increased traffic, and the size of the facilities would potentially result in both direct and indirect adverse impacts on the cultural landscape. Developing an access road to the new visitor center would require introducing a contemporary structure through a historic pasture, which would reduce the integrity of the cultural landscape.

Cumulative Impacts

Cumulative impacts on cultural resources would generally be the same as those described under alternative C. However, impacts would likely occur more rapidly because visitors would be provided with easy access to areas that were previously closed to the public.

Conclusion

Impacts on archeological resources in the Pecos Pueblo / mission ruins complex area would be minimal; however, the potential exists for both indirect and direct adverse impacts on sites near the stage stop and at the Gateway overlook. Adaptively using historic structures would help preserve these resources. Constructing new paved roads and visitor facilities at the Gateway overlook and building maintenance and administrative facilities near the stage stop would adversely affect the cultural landscape in these areas. Increased potential exists for impacts on sites or resources valued by traditional use groups.

■ NATURAL ENVIRONMENT

Impacts on Floodplains, Wetlands, and Riparian Habitat

Impacts from allowing fishing and hiking in the riparian habitat near the Pecos River, controlling the number of people allowed to fish, and requiring all visitors to remain on established trails would be the same as those described under the proposed action.

Constructing a new bridge across Glorieta Creek to provide access to the ranch house and restoring the Colonias bridge as a footbridge would be exempted from compliance with EO 11990, as described under alternative C.

Constructing a new footbridge across the Pecos River near the ranch house and a 0.5-mile trail along the river would have the same impacts as those described under the proposed action and alternative C.

Constructing a new maintenance and administrative area between Kozlowski's and the ranch house might adversely affect the riparian area of Glorieta Creek. The maintenance facility would be outside the 500-year floodplain, in

accordance with NPS guidelines for implementing EO 11990; however, storm runoff from this facility could drain into the creek. Since maintenance areas typically use various contaminants and toxic materials, runoff from this area could contaminate the riparian system of the creek. The maintenance area would be designed to minimize this impact.

Constructing a new 3,500-square-foot visitor center and a 40-car parking lot at the Gateway overlook would not adversely affect any wetlands, floodplains, or riparian habitat.

Constructing a new 1-mile entrance road and a parking area for 20 cars at Kozlowski's Stage Stop would not adversely impact the riparian area of Glorieta Creek. A trail along the bank of Glorieta Creek would provide visitors with opportunities to get near the water without trampling vegetation, This trail would not adversely impact the riparian area.

Impacts on Vegetation and Wildlife

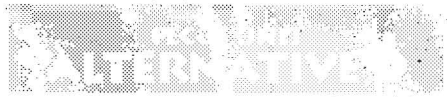
Impacts on vegetation and wildlife from reconfiguring the trail from the Pecos Pueblo / mission ruins complex to the Fogelson visitor center would be the same as those described under the proposed action and alternative C. Other impacts that would be the same as under the proposed action and alternative C are those from removing the administrative building, the maintenance area, curatorial facilities, and housing; constructing a trail from the Fogelson visitor center to Kozlowski's Stage Stop; and relocating the picnic area to a site near the visitor center.

Constructing a 1-mile paved road from NM 63 to a new visitor center at the Gateway overlook and 1.5 miles of new roads in the park would affect 10 acres of vegetation. Wildlife would be displaced during construction and would continue to be adversely impacted during the operation period. Habitat fragmentation would occur, and vehicle travel on park roads would likely increase road kills. Constructing a 3,500-square-foot visitor center and parking for 40 cars would effect 1 acre of vegetation and wildlife habitat. The area was previously disturbed so the affect would not be significant. Wildlife would be displaced from this area, but this would not be a significant impact.

Impacts on vegetation and wildlife from constructing a 20-car parking lot, restrooms, and 0.25-mile trail at Kozlowski's Stage Stop would be the same as those described under the proposed action.

Improving a 1-mile gravel road leading to the ranch house from Glorieta Creek and constructing a 15-car parking lot would disturb 1.5 acres of vegetation and wildlife habitat. This would not have an adverse impact on vegetation or wildlife. Constructing a trail from the ranch house to the mill site would disturb 0.5 acre of vegetation but would not adversely affect vegetation or wildlife. Maintaining 400 acres of pastureland by fire or manual cutting would not disturb vegetation or wildlife. Restoring 2,000 acres of pasture would bring back the native plant community and improve wildlife habitat.

Constructing a new maintenance and administrative facility between Kozlowski's and the ranch house would disturb 3 acres of vegetation and wildlife habitat; however, impacts on wildlife and vegetation would not be significant.



Impacts on vegetation and wildlife from constructing 10 miles of trail on the east side of the Pecos River would be the same as those described under the proposed action and alternative C.

Constructing a 0.75-mile pedestrian trail from Kozlowski's to the ranch house would not adversely affect vegetation or wildlife since it would be on previously disturbed ground.

Impacts on vegetation and wildlife from constructing housing on a site where two trailers now sit and restoring the casita as employee housing would be the same as those described under alternative C.

Impacts on Threatened, Endangered, or Sensitive Species

All development and visitor use sites were surveyed for the presence of any threatened, endangered, or sensitive species listed by state and federal agencies. No listed species were found on any of the sites; therefore, development would not adversely affect any threatened, endangered, or sensitive species.

Impacts on Water Resources

Developing a new 3,500-square-foot visitor center with restrooms at the Gateway overlook would not adversely affect water resources or water quality. State-of-the-art restrooms would be used to avoid adverse impacts on water resources.

Developing Kozlowski's as a visitor use area might increase the potential for adverse impacts on Glorieta Creek. Sedimentation and erosion controls would be used during construction to keep sediment from entering the creek. However, pollutants from the parking area could be washed into the creek, adversely affecting water quality. The facility would be designed to minimize this impact. Constructing a trail from Kozlowski's to the Santa Fe Trail ruts would not adversely impact the water quality in Glorieta Creek. Without a trail visitors would likely try to reach the creek, trampling vegetation and disturbing the riparian habitat. A trail would prevent this disturbance.

Constructing a 1-mile gravel road to the ranch house and constructing a 15-car parking lot would not adversely impact water resources and quality because sedimentation and erosion controls would prevent sediment from entering the creek. Drainage from the parking lot would be diverted and filtered so that contaminated water would not directly enter the creek.

Replacing the footbridge across the Pecos River and constructing a 0.5-mile interpretive trail along the river would require sediment and erosion control devices during construction to prevent adverse impacts on the river. No adverse impacts on water quality or resources would be likely to occur after construction.

Constructing a maintenance facility and administrative offices on 3 acres of land between Kozlowski's Stage Stop and the ranch house might adversely affect water resources; however, the maintenance facility would be designed to minimize this impact

The effects of controlling erosion in the Glorieta Creek watershed, monitoring gullies and headcuts (along with identifying reasons for their existence), and stabilizing soils in the park would be the same as those described under the proposed action and alternative C.

Constructing new roads would increase stormwater runoff in the park, potentially adversely affecting water quality.

Impacts on Prime and Unique Farmlands

No prime and unique soils would be impacted because no development is proposed on these soils.

Cumulative Impacts

Development near the park might cumulatively impact wildlife habitat and water resources. There would be no other cumulative impacts on natural resources as a result of this alternative.

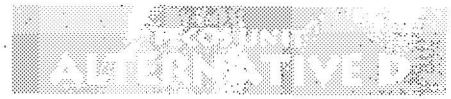
Conclusion

No significant adverse impacts on natural resources would result from implementing alternative D. Constructing a maintenance and administrative facility between the ranch house and Kozlowski's Stage Stop would increase the chance of adversely impacting water resources and the riparian area of Glorieta Creek.

■ SCENIC ENVIRONMENT

Impacts on Scenic Resources

While developing park operations and a visitor staging area near Kozlowski's Stage Stop would not impact critical views, it would significantly impact the existing scene associated with the ranch. The development would introduce contemporary and urban facilities into the landscape. Even though every effort would be made to blend the facilities into the landscape, the large scale of the development would make it difficult to completely conceal its impacts on the scenery.



The new visitor center at the Gateway overlook would be built in a previously disturbed area, which would minimize negative impacts on the scenery. However, the scale of development would make it difficult to screen completely.

Impacts at Kozlowski's Stage Stop, the Pecos Pueblo / mission ruins complex, Fogelson visitor center, and ranch house would be the same as those described under the proposed action.

Cumulative Impacts

Development in the park, combined with potential development outside the park, would likely adversely impact the scenic resources.

Conclusion

New facilities, especially the new visitor center at the Gateway overlook, would have adverse impacts on scenery in the park. The quality of the scenery outside the park might be adversely impacted, depending on the success of the National Park Service in working with owners of nearby lands.

■ SOCIOECONOMIC ENVIRONMENT

Impacts on Visitors

Implementing alternative D would allow visitors to experience more of the park's natural and cultural resources. But increased park development would interfere with the ability of visitors to view this area as a cultural landscape. Increased cars on park roads would create more noise, adversely affecting the visitor experience.

By making the Gateway overlook the first stop, visitors would better understand the area's significance as a gateway and its cultural landscape.

Access would be provided to Kozlowski's Stage Stop and a ranch building. These sites would provide onsite interpretation of the Santa Fe Trail era, which would have a beneficial effect on their experience.

Constructing an administrative and maintenance facility between Kozlowski's and the ranch house would adversely impact the visitor experience by siting operation functions in the middle of park resources. Noise, administrative traffic, and views of parked cars at these facilities from the Gateway overlook would adversely affect the visitor experience.

ALTERNATIVE D

Impacts on Local Residents

Impacts on local residents under this alternative would be the same as those described under the proposed action except that expanding vehicle access throughout the park might increase visitation, creating more local traffic. This would adversely affect local residents who are used to current traffic levels. An average of 10–20 vehicles per day would be added to local traffic volumes.

Providing a resource education facility for local school groups and other groups visiting the park would improve local understanding of the significance of the area and create a greater purpose for the Park Service in the local community.

Impacts on the Local Economy

Impacts on the local economy would be the same as those described under the proposed action except visitation would increase as a result of efforts to make the park more accessible by vehicle. This would increase the amount of tourist dollars spent, benefiting the local economy.

Cumulative Impacts

Increased visitation and length of stay would mean more tourist dollars spent in the area. Educating the local schoolchildren and other organized groups, combined with the education system in the local area, would have a beneficial cumulative effect by increasing knowledge in the local community about the historical and natural significance of the area.

Conclusion

This alternative would have a beneficial effect on visitors by providing an opportunity for understanding the role of this area in history. However, increased vehicle access and centralized park operations would result in fewer benefits than under the proposed action.

Minor economic benefits would be realized in the village of Pecos and nearby communities from the development of new park facilities and from increased park visitation. The presence of a resource education facility would have a beneficial effect on the local community.

IMPACTS FROM THE GLORIETA UNIT ALTERNATIVES

GLORIETA UNIT ALTERNATIVE 1

GLORIETA UNIT ALTERNATIVE 1 (NO ACTION)

■ CULTURAL ENVIRONMENT

Impacts on Archeological Resources, Including Collections

Archeological resources have been damaged in the past and would continue to deteriorate from unstructured visitation, vandalism, and relic hunting. No effects on archeological resources near Cañoncito would be expected. Archeological resources in the nearby valley and at Pigeon's Ranch would continue to be damaged by development or other incompatible use. Park law enforcement activities, research, monitoring, and interpretation would continue to help mitigate potential impacts on resources in nearby areas.

Impacts on Historic Sites and Structures

Under this alternative the existing structure at Pigeon's Ranch would be adversely impacted because the road is immediately adjacent to the building, there are no formalized trails or parking, and visitors might inadvertently damage the structure and walk or drive onto the fallen adobe remnants or other site features.

While the building and the nearby site would receive routine maintenance, continued deterioration from weather, inappropriate visitor use, traffic, and adjacent development could over time affect those qualities that make this area a *national historic landmark*.

Impacts on Cultural Landscapes

Negative impacts on the cultural landscape of the Glorieta unit from the continued presence of NM 50 and from adjacent land use (residential development and highway traffic) would continue.

Cumulative Impacts

At Glorieta the Pigeon's Ranch building and archeological resources have been damaged in the past and would continue to deteriorate from unstructured visitation, development, vandalism, and relic hunting. The loss of resource integrity would eventually make it impossible to retrieve accurate archeological information about the layout of the site, the battle, or other previous human activities.

GLORIETA UNIT
ALTERNATIVE 1

Conclusion

Development, traffic, and visitor use at Glorieta would continue to adversely impact the site and the structure. At Cañoncito negative effects associated with I-25 would also continue.

NATURAL ENVIRONMENT

Impacts on Floodplains, Wetlands, and Riparian Habitat

Wetlands or floodplains would not be affected under this alternative because all development would be sited to avoid adversely affecting these resources.

Impacts on Vegetation and Wildlife

No significant impacts on vegetation or wildlife would occur under alternative 1.

Impacts on Threatened, Endangered, or Sensitive Species

There would be no impacts on any known endangered, threatened, or sensitive species under this alternative.

Impacts on Water Resources

Glorieta Creek would continue to be adversely affected by heavy nutrient loading from unknown sources outside the park. Erosion would continue in the Glorieta Creek watershed. Gullies and headcuts initiated by past erosion in Glorieta Creek would continue to gradually advance up tributary watersheds, adversely affecting water quality.

Impacts on Prime and Unique Farmlands

No adverse impacts would occur on soils that are designated as prime and unique farmlands.

Cumulative Impacts

Development adjacent to the park might cumulatively impact wildlife habitat and water resources.

GLORIETA UNIT
ALTERNATIVE 1

Conclusion

There would be no adverse impacts on threatened or endangered species, wetlands, floodplains, vegetation, prime and unique farmlands, or wildlife as a result of this alternative. Erosion of Glorieta Creek would continue, increasing sedimentation and adversely affecting water quality.

■ SCENIC ENVIRONMENT

Impacts on Scenic Resources

Impacts on nearby scenic resources would be minimal because there would be no new construction by the National Park Service. However, continued development of adjacent land would be intrusive.

Cumulative Impacts

Continued development outside the park could adversely affect the scenic resources in the park.

Conclusion

No adverse impacts would result from this alternative. Scenic resources inside the park could be adversely impacted by development outside the park.

■ SOCIOECONOMIC ENVIRONMENT

Impacts on Visitors

The visitor experience would remain basically the same because no facilities or access would be developed.

Impacts on Local Residents

Local residents of the village of Pecos and other nearby areas would not experience any change in existing conditions as a result of this alternative.

GLORIETA UNIT
ALTERNATIVE 1

Impacts on the Local Economy

There would be no new construction for visitor facilities and no significant increases in visitor use under this alternative, so no additional economic benefits would be expected to accrue to the local economy. Visitor expenditures in the surrounding area would continue at present levels.

Cumulative Impacts

No cumulative impacts would occur as a result of this alternative.

Conclusion

No significant adverse impacts would occur on local residents or the local economy. The visitor experience would be adversely affected because no new facilities or educational programs would be developed.

GLORIETA UNIT ALTERNATIVE 2 (PROPOSED ACTION)

GLORIETA UNIT ALTERNATIVE 2

■ CULTURAL ENVIRONMENT

Impacts on Archeological Resources, Including Collections

Buried structural and landscape features at Pigeon's Ranch likely hold a wealth of potential information about the site that could clarify gaps and inconsistencies in the historic record. Archeological investigations and treatment of the landscape features would reduce indirect impacts from visitor use and would allow visitors to experience a historic scene similar to that of the Civil War period. Removing nonhistoric structures, as well as clearing and maintaining open areas, would be accomplished in a manner that would protect archeological resources.

Almost all of the area proposed for facility development at Pigeon's Ranch has been previously disturbed by commercial ventures, roads, or housing. Therefore, adding visitor facilities and a pedestrian loop trail would not be not expected to adversely impact archeological resources. Removing the road and constructing new facilities would be accomplished with appropriate mitigating measures to avoid adverse impacts.

It is unlikely that resources at Cañoncito would be directly impacted by proposed development because the area was heavily disturbed during the construction of I-25. Potential effects on archeological resources from developing a trail and trailhead parking area, visitor facilities, and an interpretive exhibit would be mitigated by avoiding sites and conducting appropriate archeological investigations before development.

Impacts on Historic Sites and Structures

Proposed plans to reroute NM 50, return the existing road to an unpaved trail, remove extraneous buildings, and stabilize the Pigeon's Ranch structure would have a beneficial effect on this site. Currently, vibrations from passing vehicles might be producing incremental damage to adobe walls at the ranch structure. Proximity to the road encourages visitors to stand and walk close to the building and to use the structure for support. Moving the road and stabilizing the structure would be a beneficial impact and would preserve this national historic landmark and slow further negative impacts.

Implementing proposals in this alternative would also discourage visitors from walking or driving onto collapsed remnants of structures surrounding the existing building. This alternative would also reduce negative impacts associated with relic collecting and inappropriate development activities.

If NM 50 was not relocated, impacts of this alternative would be similar to those described under alternative 1. However, developing an interpretive trail and an interpretive exhibit would reduce impacts on the Pigeon's Ranch structure and the nearby setting by educating visitors about the sensitivity of these resources. Other measures,

GLORIETA UNIT
ALTERNATIVE 2

including special studies and stabilization techniques, also would need to be developed to reduce continuing adverse impacts on the site from traffic and unstructured visitation.

Impacts on Cultural Landscapes

Removing NM 50 and other modern features from the Pigeon's Ranch area would eliminate intrusions on the historic landscape. These features now make it difficult to interpret the area. Maintaining open spaces characteristic of the Civil War period would have a beneficial effect on the cultural landscape.

If the road could not be removed, other measures, including special studies and stabilization techniques, would be developed to reduce the continuing adverse impacts on the site from traffic and unstructured visitation.

Mitigating measures would minimize direct negative impacts on significant character-defining landscape features. Recommendations for ongoing preservation and interpretation would be contained in an approved cultural landscape report. Guidance from this document would help minimize direct and indirect impacts on the cultural landscape. Until the cultural landscape report was completed and approved, a cultural landscape overview would provide interim guidance for management.

Cumulative Impacts

Past development and relic hunting at the Glorieta unit have largely diminished its potential to yield scientific information — an important factor in its significance as a national historical landmark.

Implementing the plan would help reverse this trend and would provide opportunities to identify the location of battle lines and the sizes and disposition of forces. These distinctions are important to reconcile conflicting historical accounts.

Conclusion

Developing the Glorieta unit as proposed would benefit the park's historic properties. If NM 50 cannot be rerouted, adverse impacts on Pigeon's Ranch would continue to occur.

GLORIETA UNIT
ALTERNATIVE 2

■ NATURAL ENVIRONMENT

Impacts on Floodplains, Wetlands, and Riparian Habitat

No development would occur in these areas; therefore, no adverse impacts would result.

Impacts on Water Resources

Sediment and erosion control measures would prevent adverse impacts on Glorieta Creek during the removal of NM 50. By removing the paved road, adverse impacts of petroleum products from vehicles in storm runoff would be eliminated. Monitoring water quality of Gallisteo Creek would have a beneficial effect by providing critical baseline data to use in assessing impacts on this resource from outside development. This data would be used to recommend stronger controls of water quality in Gallisteo Creek.

Impacts on Vegetation and Wildlife

Turning NM 50 into a trail would have a beneficial impact on vegetation and wildlife. Eliminating the noise and fumes associated with vehicles and reducing roadway runoff would improve the health of the vegetation and create an environment better suited for wildlife. The number of animal roadkills is not known, but this threat would be eliminated, which would have a beneficial impact on wildlife.

Constructing a 20-car parking lot and a restroom facility near the east boundary of the Pigeon's Ranch site on approximately 0.75 acre would not adversely impact vegetation or wildlife in that area. This area has been a residential area since the mid-1800s, and most of the land has been previously disturbed. Constructing a 3-mile loop trail for interpreting the site would cover 2 acres but would not be an adverse impact on vegetation or wildlife. This trail would likely follow one of the existing trails created by local residents.

Constructing an interpretive exhibit with parking for 10 cars and 4 buses on the Cañoncito site on 0.5 acre would not adversely affect vegetation and wildlife since this area has already been disturbed.

Impacts on Threatened, Endangered, or Sensitive Species

All development sites were surveyed for the presence of any federal category 2 species and any federal or state-listed threatened or endangered species. No threatened, endangered, or sensitive species were located on any of the sites; therefore, no adverse effects would be expected. Future development of trails would avoid potential threatened or endangered species habitat.

GLORIETA UNIT
ALTERNATIVE 2

Impacts on Prime and Unique Farmlands

No development would occur on prime and unique farmlands.

Cumulative Impacts

Development outside the park might cumulatively impact wildlife habitat and water resources.

Conclusion

Removing NM 50 and the associated vehicle traffic would have a beneficial effect on nearby wildlife habitat and water resources.

■ SCENIC ENVIRONMENT

Impacts on Scenic Resources

Proposed development at Pigeon's Ranch would be outside the core battlefield and would not have an adverse effect on the scenic resources of the unit. Adaptively using existing facilities at Pigeon's Ranch would have minimal negative impacts. Removing NM 50 would have a significant positive impact on the visual quality of the battlefield area. Construction equipment, clearing and grading operations, and dust would create temporary adverse impacts. The exterior interpretive exhibit and parking area at Cañoncito would not adversely impact the visual scene because of its small size.

Cumulative Impacts

Development of private lands outside the park might cumulatively adversely affect scenic resources in the park.

Conclusion

This alternative would preserve most of the existing visual quality of the park. The quality of scenery outside the park might or might not have significant adverse impacts in the future, depending on the success of the National Park Service in working with owners of nearby lands.

GLORIETA UNIT
ALTERNATIVE 2

SOCIOECONOMIC ENVIRONMENT

Impacts on Visitors

Onsite interpretation of the Battle of Glorieta Pass would have a beneficial effect on the visitor experience by providing people with a greater understanding of the Civil War and the role that was played in the West.

Impacts on Local Residents

Landowners maintaining ownership of private land within the unit might consider a likely increase in visitation an adverse impact on their quality of life. While the Park Service would maintain local access for property owners in the unit, the rerouting of NM 50 might inconvenience local traffic by eliminating a through route. However, relocating NM 50 outside the unit might have a beneficial effect by avoiding future upgrading of the highway to a four-lane, high-speed thoroughfare.

Impacts on the Local Economy

Some short-term positive economic benefits would accrue to the local and regional economy because of new park construction and development. With a variety of opportunities to experience the park and a number of hiking trails, visitors probably would stay longer. This would increase the amount of tourist dollars spent locally.

Cumulative Impacts

Increased visitation and length of stay could mean more tourist dollars spent in the area. No other cumulative impacts were identified for the socioeconomic environment.

Conclusion

This alternative would generally have beneficial effects on the visitor experience. Interpreting the Battle of Glorieta Pass onsite would improve park visitors' understanding of the Civil War and the role that was played in the West. The impacts on local residents might or might not be beneficial. Impacts on the local economy would likely be beneficial.

GLORIETA UNIT ALTERNATIVE 3

GLORIETA UNIT ALTERNATIVE 3

■ CULTURAL ENVIRONMENT

Impacts on Archeological Resources, Including Collections

Because of previous disturbance to the areas proposed for development at Pigeon's Ranch, constructing new visitor facilities would not have an adverse impact on archeological resources. Maintaining open spaces at Pigeon's Ranch would be done in a manner that would not destroy artifacts or their context. No impacts on archeological resources at Cañoncito would be expected.

Impacts on Historic Sites and Structures

Impacts under this alternative would be similar to those discussed in the proposed action.

Impacts on Cultural Landscapes

Impacts under this alternative would be similar to those discussed in the proposed action.

Cumulative Impacts

As discussed under the proposed action, past development and relic hunting in the Glorieta unit have largely diminished its potential to yield scientific information. Implementing the plan would help to reverse this trend and would provide opportunities to identify the location of battle lines and the sizes and disposition of forces. These distinctions are important to reconcile conflicting historical accounts.

Conclusion

Impacts under this alternative would be similar to those discussed under the proposed action. No impacts would occur on cultural resources due to the construction of new facilities.

NATURAL ENVIRONMENT

Impacts on Floodplains, Wetlands, and Riparian Areas

As described under the proposed action, no development would occur in any of these sensitive areas; therefore, no adverse impacts would result.

Impacts on Water Resources

Impacts on water resources from removing NM 50 would be similar to those described under the proposed action. Sediment and erosion control measures would prevent adverse impacts on Glorieta Creek. Monitoring the water quality of Gallisteo Creek would provide critical baseline data to assess impacts on this resource from outside development. This data would be used to recommend stronger water quality control in Gallisteo Creek.

Impacts on Vegetation and Wildlife

Impacts on vegetation and wildlife would be the same as those described under the proposed action. Constructing a 20-car parking lot, a visitor contact station, and a restroom on about 1 acre near the east boundary of the Pigeon's Ranch site would not adversely impact vegetation or wildlife in that area. This area has been a residential area since the mid-1800s, and most of the land has been previously disturbed. Impacts on vegetation from constructing a 3-mile loop trail for interpretation of the site would be the same as those described under the proposed action. It is likely this trail would follow one of the existing trails made by nearby residents.

Impacts from constructing an interpretive exhibit with spaces for 10 cars and 4 oversized vehicles at the Cañoncito site would be the same as those described under the proposed action.

Impacts on Threatened, Endangered, or Sensitive Species

All sites proposed for development were surveyed for the presence of any threatened, endangered, or sensitive species listed by state and federal agencies. No listed species were found on any of the sites; therefore, no effects would be expected. Trails would be aligned to avoid any potential threatened and endangered species habitat.

Impacts on Prime and Unique Farmlands

No development would occur on prime and unique farmlands.

Cumulative Impacts

Development outside the park could cumulatively impact wildlife habitat and water resources. There would be no other cumulative impacts on natural resources as a result of this alternative.

Conclusion

Removing NM 50 and the associated vehicle traffic would have a beneficial effect on nearby wildlife habitat and water resources.

■ SCENIC ENVIRONMENT

Impacts on Scenic Resources

The new facility at Pigeon's Ranch would be compatible with existing development; however, associated parking would have adverse impacts on the visual scene. Removing NM 50 would have a beneficial impact on the battlefield scene. Impacts from constructing an interpretive exhibit and parking at the Cañoncito site would be the same as those described under the proposed action.

Cumulative Impacts

Development under this alternative would adversely affect scenic resources when combined with development likely to take place outside park boundaries.

Conclusion

This alternative would preserve most of the existing visual quality of the park. New facilities would have adverse impacts on the landscape at selected areas. The quality of the scenery outside the park might be adversely impacted, depending on the success of the National Park Service in working with owners of nearby lands.

■ SOCIOECONOMIC ENVIRONMENT

Impacts on Visitors

As under the proposed action, interpretation of the Battle of Glorieta Pass would have a beneficial effect on the visitor experience.

Impacts on Local Residents

As in the proposed action, private landowners in the unit might consider an increase in visitation to be an adverse impact on their quality of life. Also, the rerouting of NM 50 might result in an inconvenience to local traffic by eliminating a through route. However, relocating NM 50 outside of the unit might have a beneficial effect by avoiding future upgrading to a four-lane, high-speed thoroughfare.

Impacts on the Local Economy

As in the proposed action, new park developments would likely prompt visitors to stay longer, which would increase the amount of tourist dollars spent locally. Also, some short-term positive economic benefits would accrue to the local and regional economy because of new construction and development.

Cumulative Impacts

Increased visitation and length of stay could mean increased tourist dollars spent in the area.

Conclusion

This alternative would generally have beneficial effects on the visitor experience. Interpreting the Battle of Glorieta Pass onsite would improve park visitors' understanding of the Civil War and the role that was played in the West. The impacts on local residents might or might not be beneficial. Impacts on the local economy would likely be beneficial.

COMPLIANCE REQUIREMENTS

COMPLIANCE WITH NATURAL RESOURCE REQUIREMENTS

In implementing the approved General Management Plan for Pecos National Historical Park, the National Park Service will comply with all applicable laws, regulations, and executive orders, including those listed below.

Architectural Barriers Act of 1968 (42 USC 4151 et seq.) and Rehabilitation Act of 1973 (29 USC 701 et seq.) — All facilities and programs will be accessible to visitors with disabilities.

Clean Air Act, as amended (42 USC 7401 et seq.) — Pecos National Historical Park is designated as a class II clean air area. Maximum allowable increases (increments) of sulfur dioxide, particulate matter, and nitrogen oxides beyond baseline concentrations established for class II areas may not be exceeded. Section 118 of the Clean Air Act requires all federal facilities to comply with existing federal, state, and local air pollution control laws and regulations. Pecos National Historical Park would work with the state to ensure that all park activities meet all requirements.

Endangered Species Act of 1973, as amended (16 USC 1531 et seq.) — Section 7 of the Endangered Species Act requires all federal agencies to consult with the U.S. Fish and Wildlife Service to ensure that any action authorized, funded, or carried out by the agency does not jeopardize the continued existence of listed species or critical habitat. NPS policy provides protection for species proposed for listing as well as any state-listed species. The National Park Service is conducting section 7 consultation with the U.S. Fish and Wildlife Service. Before construction and during the design phase, further surveys and consultation will be done to protect these species.

Executive Order 11988 ("Floodplain Management") — This order requires all federal agencies to avoid construction in the 100-year floodplain unless no other practicable alternative exists. Trails, comfort stations, and roads are exempt from compliance under NPS guidelines. No known floodplains would be affected by the proposed action.

Executive Order 11990 ("Protection of Wetlands") — This order requires federal agencies to avoid, where possible, impacts on wetlands. Trails are exempt from compliance under NPS guidelines for implementing this executive order. During the design phase of any development, the most recent wetland maps will be consulted to ensure that facilities are outside wetlands. No known wetlands would be affected by the proposed action.

Analysis of impacts on prime and unique agricultural lands in implementing the National Environmental Policy Act (45 CFR 59189) — Federal agencies are required to analyze the impacts of federal actions on agricultural lands, in accordance with the National Environmental Policy Act. This policy was developed to minimize the effect of federal programs in converting prime, unique, or locally important farmland to nonagricultural uses. According to the Natural Resources Conservation Service (formerly the Soil Conservation Service), the Cañoncito unit may contain prime and unique farmlands. However, no development would be proposed for these areas in the Cañoncito unit.

During design, the New Mexico Environmental Improvement Division will be consulted to ensure compliance with the state's section 401 water quality certification program, the national pollution discharge elimination system (NPDES) for stormwater discharge, and the state's groundwater protection program.

COMPLIANCE WITH CULTURAL RESOURCE REQUIREMENTS

The National Park Service is mandated to preserve and protect its cultural resources through the organic act of August 25, 1916, and through specific legislation such as the Antiquities Act of 1906, the National Environmental Policy Act of 1969 (as amended), and the National Historic Preservation Act of 1966, which is described below.

Cultural resources (including ethnographic resources associated with traditionally affiliated groups) in Pecos National Historical Park will be managed in accordance with these acts and in accordance with chapter V of the *NPS Management Policies*, the *Cultural Resource Management Guideline* (NPS-28), the Advisory Council on Historic Preservation's implementing regulations regarding "Protection of Historic Properties" (36 CFR 800), and the *Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation* (FR 48:44716-40). Other relevant policy directives and legislation are detailed in NPS-28.

As part of its cultural resource management responsibilities, the National Park Service surveys and evaluates all cultural resources on lands under its jurisdiction. Section 110 of the National Historic Preservation Act requires that historic properties be identified and evaluated for their eligibility for listing on the National Register of Historic Places. Cultural resources are evaluated by applying the criteria for the national register. All cultural resources in the park eligible for the national register will be recorded according to the highest professional standards. Section 110 also provides that historic properties be managed in a way that preserves and protects their values, especially nationally significant values, in

compliance with section 106. Historic properties not under the jurisdiction of the park, but which could be affected by actions outlined in this plan, were considered during the planning process.

Before site selection and preliminary design a professional archeologist will determine the need for further archeological inventory or testing evaluation. Any such studies will be carried out in consultation with the state historic preservation officer and concerned traditionally associated groups before construction. Any large-scale archeological investigations will be undertaken in consultation with the state historic preservation office and traditionally associated groups.

Responsibility for protecting archeological resources is included under several laws mentioned earlier, as well as the Archeological Resources Protection Act of 1979.

Section 106 of the National Historic Preservation Act of 1966 requires that federal agencies having direct or indirect jurisdiction over undertakings consider the effect of those undertakings on national register properties or eligible properties and afford the Advisory Council on Historic Preservation and the state historic preservation office an opportunity to comment. Toward that end the National Park Service will work with these entities to meet the requirements of 36 CFR 800 and the August 1990 programmatic agreement among the National Conference of State Historic Preservation Officers, the Advisory Council on Historic Preservation, and the National Park Service. The agreement requires the Park Service to work closely with the state historic preservation office and the advisory council in planning for new and existing NPS areas. Typically NPS projects are reviewed at four stages — task directive, policy review draft, and draft and final documents.

Comments on the draft plan received from the Advisory Council on Historic Preservation and the state historic preservation office will be included in the final plan.

This agreement also provides for a number of "programmatic exclusions" for specified actions that are not likely to have an adverse effect on cultural resources. These actions may be implemented without further review by the state historic preservation office or the advisory council provided that NPS internal review finds the actions meet certain conditions. Undertakings, as defined in 36 CFR 800, not specifically excluded in the programmatic agreement must be reviewed by the state historic preservation office and the advisory council as specified in 36 CFR 800 and before implementation.

Internally the National Park Service will complete an "Assessment of Effect on Cultural Resources" form (XXX form) before implementing any proposed actions. This is necessary to document any project effects, outline actions proposed to mitigate any effects, and document that the proposed action flows from the approved general management plan. All implementing actions for cultural resources will be reviewed, using the XXX form, and certified by regional office cultural resource specialists as specified in NPS-28.

To ensure that proposals which might affect properties eligible for the national register comply with the provisions of section 106, the Advisory Council on Historic Preservation and the New Mexico state historic preservation office were invited to participate in the planning process. The New Mexico state historic preservation office and the Advisory Council on Historic Preservation will have an opportunity to review and comment on the draft plan.

Actions requiring further review in this plan are listed in appendix F. As elements of the plan are implemented, site-specific information on selected proposed actions will be submitted to the state historic preservation office and the advisory council for their section 106 review and comment to ensure identification and adequate mitigation of any effects. These different action for each alternative are delineated in the text of this plan and are summarized in appendix F. Appendix F contains tables that summarize actions subject to further section 106 consultation with the state historic preservation office and the advisory council.

In the interim, no potentially historic property will be unalterably changed without consulting the state historic preservation office and the advisory council. This recent participation satisfies the future requirements of section 106 of the National Historic Preservation Act, as amended.

Especially relevant to the management of Pecos National Historical Park are the various laws, rules, and regulations that deal with American Indians and other traditionally associated groups. Section 110 of the National Historic Preservation act requires that NPS preservation-related activities be carried out in consultation with Indian tribes. Throughout the planning process representatives from the National Park Service met with concerned Indian groups, and dialogue regarding the project is expected to continue in the future. The principal concerns raised in discussions have been continued access, the traditional use of resources, the protection of sites, and the development of facilities. In 1994 an *Ethnographic Overview* (Levine et al. 1994) was conducted by researchers to help define the presence and general location of ethnographically sensitive areas in the park and to gain an understanding of the concerns of traditionally associated groups to guide NPS planning efforts. The overview outlined a consultation procedure for the park staff to follow in future contacts with traditional communities.

The 1993 amendments to the National Historic Preservation Act provide means whereby information about the character, location, or ownership of archeological sites, historic properties, or ethnographic sites, might be withheld from public disclosure. This provision is especially important in cases where disclosure could risk harm to the resource or impede the use of a traditional sites by practitioners. Park managers will honor traditionally associated groups' requests for confidentiality of information received as part of ongoing surveys.

The American Indian Religious Freedom Act provides for the preservation of Indian rights to practice their traditional beliefs. It also provides for consultation with Indian groups in planning and management activities that affect them. The Park Service would develop and accomplish its programs in a way that respects beliefs, traditions, and other cultural values of the Indian tribes who have ancestral ties to the park. The Park Service will also strive to ensure privacy for American Indians to pursue traditional activities without interference or inappropriate observation by those who want to learn about Indian culture.

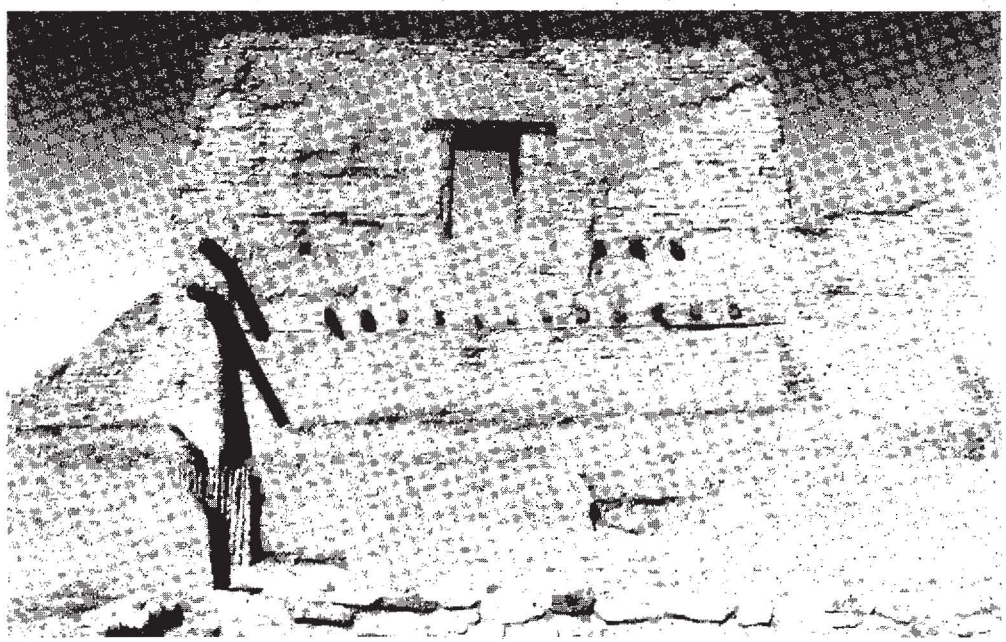
NPS training programs will cover the etiquette to be followed when park staff encounter activities or sites and offerings associated with traditional use groups. Consultation with American Indian groups with recognition of differences among tribal governments will continue in the future, helping to improve understanding and to achieve common goals. Consultation is especially critical to reach mutually acceptable solutions to questions of archeological excavations, resource preservation, and visitor use. To comply with statutory legislation regarding tribal sovereignty and religious

freedom, federal agencies must honor tribal requests for secrecy of privileged information. All possible measures will be taken to resolve differences reasonably so that park plans and actions respect the cultural and ethnographic context of sites.

Any discovery of significant archeological resources will be followed by protective measures. The Native American Graves Protection and Repatriation Act addresses the rights of tribes with regard to certain human remains and cultural items with which they are affiliated. Because of the park's long human history and known association with Pueblo communities, there is a potential for discovering human remains and associated items of cultural patrimony.

Discovery provisions of the Advisory Council on Historic Preservation's regulations (36 CFR 800.11) will be followed when properties eligible for listing on the national register are discovered during implementation of the plan.

To comply with the provisions of this act and its implementing regulations (43 CFR 10), park managers will establish a prompt and effective notification system to contact and consult with concerned groups regarding the discovery of human remains. Managers will deal with burials on a case-by-case basis with informed awareness of Indian concerns. Burials and significant objects will be afforded the utmost respect, and the National Park Service will consult with tribes regarding remains associated with these groups.



CONSULTATION AND COORDINATION

Public involvement and consultation have been key components in developing this *Draft General Management Plan / Development Concept Plan / Environmental Impact Statement*. The NPS planning team incorporated a variety of techniques including open houses, newsletters, and meetings to include a broad base of public participation in the process. The purpose of public involvement was to gain information regarding resource and public concerns and to keep the public informed of the plan as it developed. The team involved government agencies, traditionally associated groups, local landowners, and other interested people throughout the planning effort.

During the scoping and early planning phases of the project, contacts were established with traditional use groups. In November 1992–1993 the superintendent contacted the following groups:

All Indian Pueblo Council
Apache Tribe of Oklahoma
Comanche
Jicarilla Apache Tribe
Pueblo of Cochiti
Pueblo of Jemez
Pueblo of Santo Domingo
Village of Pecos

Individual meetings with representatives from each group were held to identify concerns and interests. In general their primary considerations were for the Pecos Pueblo to remain unchanged, and to preserve and generate an understanding for the cultures related to the Pecos Pueblo.

Traditional users are those who descended from the original inhabitants of the Pecos Pueblo, including the period of Spanish occupation. A newsletter was prepared in November 1992 and sent to all groups identified as having traditional ties to the Pecos area. The newsletter included an introduction to the planning process, preliminary purpose and significance ideas for the park, and an outline of initial concepts for the park's future. Two open houses were also held in the village of Pecos and in the park. Responses from the newsletter and open houses generally included concerns about the continued preservation of the Pecos Pueblo, educational programs on the cultural aspects of the park's heritage, recreational opportunities, employment opportunities for the local residents, and limits on development.

During the early planning phases of the project a newsletter was sent to the public with general information on the planning process, park significance and purpose, and initial concepts for the park's future. Two open houses were also conducted in Santa Fe and the village of Pecos in February 1993. Responses from the public included cultural and natural resource protection considerations, provisions for recreational opportunities, educational programs, employment opportunities, and limited development.

Later in the planning process a newsletter was sent to the public to summarize the public comments collected earlier and to present draft alternative concepts. General response supported hiking, fishing, minimal new construction, and a high level of resource protection. Little or no support was indicated for new roads, new construction, and cattle grazing as part of an interpretive program. A meeting was held to solicit comments from public agencies, including the Bureau of Land Management, the New Mexico Department of Game and Fish, the New Mexico Department of Forestry, the San Miguel County Sheriff's Office, the Soil Conservation Service (subsequently the Natural Resources Conservation Service), the U.S. Fish and Wildlife Service, and the U.S. Forest Service (Pecos/Las Vegas ranger district). The representatives who attended supported limiting new development and protecting resources and did not support new roads or facilities.

Public open houses were held to describe the alternative concepts in greater detail in December 1993. The draft plan will be reviewed by the public during a 60-day public comment period that will include public open houses. Comments on the plan will be analyzed, and appropriate revisions will be made in the final plan. The final document will include responses to substantive comments.

LIST OF AGENCIES AND ORGANIZATIONS TO WHOM COPIES OF THE DRAFT PLAN ARE BEING SENT

Advisory Council on Historic Preservation
Advisory Council on Historic Preservation
Advisory Council on Historic Preservation
Advisory Council on Historic Preservation
All Indian Pueblo Council
All Indian Pueblo Cultural Center
Andover Foundation for Archeological Research
Apache Tribe of Oklahoma
The Archeological Conservancy
Bureau of Indian Affairs
Bureau of Land Management
Butler County Historical Society
Colorado Historical Society
Hoblitzelle Foundation
Honorable Jeff Bingaman
Honorable Pete Campos
Honorable Max Coll
Honorable Pete V. Domenici
Honorable Edward J. Lopez

Honorable E. Kelly Mora
Honorable Roman Naes
Honorable Bill Richardson
Honorable Nick L. Salazar
Honorable Steven Schiff
Honorable Joe Skeen
Honorable Angie Vigil-Perez
Institute of American Indian Arts
Interstate Stream Commission
Jemez State Monument
Jicarilla Apache Tribe
Kiowa Business Committee
Laboratory of Anthropology
Lisboa Springs Fish Hatchery
Mescalero Apache Tribe
Museum of New Mexico
National Resources Conservation Service (formerly Soil Conservation Service)
The Nature Conservancy
New Mexico Archeological Council
New Mexico Department of Game and Fish
New Mexico Department of Natural Resources
New Mexico Economic Development & Tourism
New Mexico Environment Department
New Mexico Highway and Transportation DepartmentNew Mexico Historic Preservation Officer
New Mexico Natural Historic Institute
New Mexico State Engineers Office
New Mexico State Land Office
New Mexico Riparian Council
New Mexico State Monuments
Nuh-ma-Nuh Business Commission
National Parks Conservation Association
Office of the Governor
Pecos Benedictine Monastery
People for the West San Miguel Chapter
Pueblo of Cochiti
Pueblo of Jemez
Pueblo of Santo Domingo
Rancho de Las Golondrinas
Randall Davey Audubon Center
Richard King Mellon Foundation

Sangre de Cristo Flyfishers
School of American Research
Southwest Parks and Monument Association
U.S. Fish and Wildlife Service
U. S. Forest Service
Village of Pecos
The Wilderness Society

APPENDIXES / BIBLIOGRAPHY / PREPARERS / INDEX

APPENDIX A: SQUARE FOOTAGE NEEDS FOR ADMINISTRATIVE AND MAINTENANCE FACILITIES — PECOS UNIT ALTERNATIVES B, C, AND D

ADMINISTRATIVE FACILITIES	GROSS SQUARE FOOTAGE
Superintendent	800
Administration	500
Interpretation (chief, curation, visitor center operations)	4,000
Cultural Resources	600
Natural Resources	500
Visitor Protection	700
Maintenance (Office Space)	600
Common Areas	2,600
TOTAL	10,300
MAINTENANCE FACILITY	
Four Garage Bays, Shop, and Storage	5,000
TOTAL	5,000

APPENDIX B: SUMMARY OF FINDINGS FROM THE VALUE ANALYSIS STUDY

To identify the best location for park operations facilities, including administrative offices and maintenance facilities, a value analysis study was conducted. The study considered 15 alternatives, including each of the four general management plan alternative locations. A multidisciplinary team identified and evaluated the alternatives. The alternatives were screened using a pass (P) /fail (F) process to reduce the list to only the most reasonable alternatives. The original 15 alternatives and their pass/fail status are listed below. The alternatives in bold are the ones considered in the *Draft General Management Plan / Environmental Impact Statement*.

SITE ALTERNATIVES

1. Place outside park (F)
2. No Action (F)
3. Place at southern end (F)
4. **Place at central location** (P) — proposed under alternative C
5. **Place at northern end** (P) — proposed under alternative B
6. Upgrade facilities at existing location (F)
7. Place new facilities at ranch and adaptively use and/or restore existing structures (F)
8. **Add administrative facility to visitor center area and a new maintenance facility at the central location** (P) — proposed under alternative A
9. Add new facility at visitor center site (F)
10. Add new facility at overlook site (F)
11. Reduce the need for contact functions (F)
12. Retain existing administrative functions/facility, and build new maintenance facility (F)

13. Retain existing administrative functions/facility, and build new maintenance facility at Kozlowski's Stage Stop (F)
14. **Place administrative functions/facility at the ranch and maintenance at the central location** (P) — proposed under alternative D
15. Retain existing administrative functions/facility, place interpretation at visitor center, and locate maintenance elsewhere (F)

The four final alternatives (shown in bold) were then screened using a set of criteria developed by the planning team. The team prepared schematic site plans and cost estimates to aid in the evaluation process. The criteria are ranked below in order of importance, and the following table compares the positive and negative attributes of the four remaining alternatives.

CRITERIA FOR SCREENING

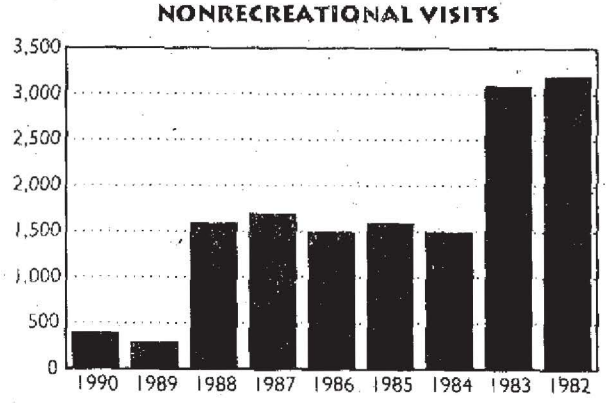
1. Protects cultural resources
2. Protects natural resources
3. Protects scenic resources
4. Potential for expansion
5. Sustainability
6. Integrates well with community
7. Availability of utilities
8. Efficiency of park operations
9. Life-cycle costs
10. Enhances visitor experience
11. Building efficiency (how adequately building functions relate to each other)
12. Site accessibility

POSITIVE AND NEGATIVE CONSIDERATIONS		
ALTERNATIVE AND RANKING	**POSITIVE ASPECTS**	**NEGATIVE ASPECTS**
Northern Location — 1	Visually screened from primary use areas; ties administration spatially and visually to administration village; does not interfere with other park activities; can be connected to city utilities; costs the least; maximum building site flexibility; minimum potential for disturbing significant subsurface resources; easy entrance/exit roads free up ranch house for other uses; allows for phased construction; all operations would be together.	Maintenance would not be centrally located; possible security issues from being close to village of Pecos; minimum protection for ranch house.
Central Location — 2	Would keep functions together; centrally located; uses previously disturbed ground.	Visually intrudes on visitor use area; physically intrudes on visitor experience; intrudes on cultural landscape; could be seen from Kozlowski's and the Pecos Pueblo / mission ruins complex; would require all new utilities; roads would have to be upgraded.
Visitor Center / Central Maintenance — 3	Existing utilities at visitor center; centrally located; could share parking facilities; easy access to administrative offices from visitor center.	Limited parking; limited flexibility for future expansion; might increase visitor confusion; would visually intrude on visitor center; scale might not fit site.
Ranch House / Central Maintenance — 4	Maintenance would be centrally located; adaptive use of historic building; maintenance would be on disturbed site; would not interfere with visitor activities; without resource education center would have the lowest cost.	Visitors would have limited access to historic ranch complex; historic buildings would receive major interior changes; upgraded access road would be required; would modify cultural landscape; most difficult construction phasing; restricted site development and architectural flexibility; operations traffic would be highly visible; access would require extensive landform modifications.

APPENDIX C: VISITOR USE AND PROJECTED VISITATION

Recreational visits are when people enter lands or waters administered by the National Park Service for recreational purposes.

Nonrecreational visits include the following: people going to and from inholdings, commuter and other through-traffic, tradespeople with business in the park, civilian activities that are part of or incidental to the pursuit of a gainful occupation (e.g., guides), government personnel (other than NPS employees) with business in the park, citizens using NPS buildings for civic or other local government business or attending public meetings, and outside research activities if independent of NPS legislative interests (e.g., meteorological research). After 1990 nonrecreational visits were no longer counted or reported for this park. Nonrecreational visits for the years 1982 through 1990 are shown in the accompanying figure.



Forecasting visitor use was achieved using a simple linear regression analysis based on limited time series data (12 data points). The high and low projections represent the approximate 90 forecast interval, i.e., there is a 0.90 probability that the actual values of the forecast variable will fall between the high and low projections.

Park use is affected by a variety of factors. Due to time and resource constraints, forecasted use of this park is based solely on past use, which is projected over time. This method implies that whatever factors influenced visitation in the past will continue to do so in the future, and that the changes in those factors will follow the patterns of the past. Extrapolation of a historic trend forecasts trend patterns and does not consider causes of the trend.

Forecasting in this manner is subject to a high probability of error because the method used is simplistic, relatively few data points are available, and there is no cause and effect relationship between past and future uses. The addition of another year's visitation figures (additional data) will affect the projections. For those reasons, a range of values were reported, and caution is warranted when interpreting and using the results.

APPENDIX D: STAFFING NEEDS

Staffing needs were developed only for the Pecos unit alternatives as a primary basis for estimating. The projected staffing needs would not be significantly changed under the Glorieta unit alternatives

ALTERNATIVE A (NO ACTION)

Administration	3.0 FTE =	3 Permanent / 0 Seasonal
Interpretation	4.47 FTE =	3 Permanent / 2.5 Seasonal
Resource Management and Visitor Protection	6.1 FTE =	3.5 Permanent / 3 Seasonal
Cultural Resource Management	5.55 FTE =	6 Permanent / 1Seasonal
Maintenance	8.42 FTE =	7.5 Permanent / 2 Seasonal
Superintendent and secretary	2.0 FTE =	2 Permanent / 0 Seasonal
TOTAL FTEs	**29.54**	
TOTAL COST	**$1,026,071**	

ALTERNATIVE B (PROPOSED ACTION)

Administration	4.5 FTE =	4 Permanent / 1 Seasonal
Interpretation	8.97 FTE =	7 Permanent / 5 Seasonal
Resource Management and Visitor Protection	9.1 FTE =	4.5 Permanent / 4 Seasonal
Cultural Resource Management	6.05 FTE =	6 Permanent / 1.5 Seasonal
Maintenance	10.82 FTE =	7.5 Permanent / 4.4 Seasonal
Superintendent and Secretary	2.0 FTE =	2 permanent / 0 Seasonal
TOTAL FTEs	**41.44**	
TOTAL COST	**$1,420,641**	

ALTERNATIVE C

Administration	4.5 FTE =	4 Permanent / 5 Seasonal
Interpretation	8.97 FTE =	7 Permanent / 5 Seasonal
Resource Management and Visitor Protection	9.1 FTE =	4.5 Permanent / 4.0 Seasonal
Cultural Resource Management	6.05 FTE =	6 Permanent / 1.5 Seasonal
Maintenance	10.82 FTE =	7.5 Permanent / 4.4 Seasonal
Superintendent and Secretary	2.0 FTE =	2 permanent / 0 Seasonal
TOTAL FTEs	**41.44**	
TOTAL COST	**$1,463,261**	

ALTERNATIVE D

Administration	4.5 FTE =	3 Permanent / 1 Seasonal
Interpretation	8.97 FTE =	7 Permanent / 5 Seasonal
Resource Management and Visitor Protection	9.1 FTE =	6.6 Permanent / 2.5 Seasonal
Cultural Resource Management	6.05 FTE =	7 Permanent / 2 Seasonal
Maintenance	10.82 FTE =	12 Permanent / 6 Seasonal
Superintendent and Secretary	2.0 FTE =	2 permanent / 0 Seasonal
TOTAL FTEs	**41.44**	
TOTAL COST	**$1,507,159**	

APPENDIX E: COST ESTIMATES

PECOS UNIT ALTERNATIVE A (NO ACTION)

Location	Construction Cost	Construction Planning Costs	Total Cost
Kozlowski's Stage Stop	$993,704	$189,638	$1,183,342
Northern Boundary	0	0	0
Gateway Overlook	0	0	0
Ranch House	1,510,168	288,200	1,798,368
Pecos Pueblo / Mission Ruins Complex and Visitor Center	242,000	46,000	288,000
Trails	0	0	0
TOTAL	**$2,745,872**	**$523,838**	**$3,269,710**

PECOS UNIT ALTERNATIVE B (PROPOSED ACTION)

Location	Construction Cost	Construction Planning Costs	Total Cost
Kozlowski's Stage Stop	$891,913	$170,212	$1,062,125
Northern Boundary / Park Administration and Operations	3,893,909	743,112	4,637,021
Gateway Overlook	168,662	32,187	200,849
Ranch House / Resource Education	2,508,634	478,747	2,987,381
Pecos Pueblo / Mission Ruins Complex and Visitor Center	589,270	112,456	701,726
Trails	246,935	47,125	294,060
TOTAL	**$8,299,323**	**$1,583,839**	**$9,883,162**

PECOS UNIT ALTERNATIVE C

Location	Construction Cost	Construction Planning Costs	Total Cost
Kozlowski's Stage Stop	$974,149	$185,906	$1,160,055
Northern Boundary / Resource Education	972,184	185,531	1,157,715
Gateway Overlook	1,067,880	203,793	1,271,673
Ranch House / Administration and Operations	4,311,611	822,826	5,134,437
Pecos Pueblo / Mission Ruins Complex and Visitor Center	1,023,970	195,414	1,219,384
Trails	113,970	21,750	135,720
TOTAL	**$8,463,764**	**$1,615,220**	**$10,078,984**

PECOS UNIT ALTERNATIVE D

Location	Construction Cost	Construction Planning Costs	Total Cost
Koziowski's Stage Stop	$1,320,521	$252,008	$1,572,529
Gateway Overlook	3,089,884	589,672	3,679,556
Ranch House / Administration and Operations / Resource Education	4,952,332	945,101	5,897,433
Pecos Pueblo / Mission Ruins Complex and Visitor Center	1,013,817	193,476	1,207,293
Trails	113,970	21,750	135,720
TOTAL	**$10,490,524**	**$2,002,007**	**$12,492,531**

Construction costs include the construction of new facilities, exhibit and audiovisual production, construction supervision, and contingencies. Construction planning costs include aerial/topographic surveys, comprehensive design, utility negotiation, historic furnishings and structural reports, archeological research, construction drawings and specifications, archeological data recovery, cultural and resource studies, exhibit design, and audiovisual design.

GLORIETA UNIT ALTERNATIVE 1

No Development Costs

GLORIETA UNIT ALTERNATIVE 2

Location	Construction Cost	Construction Planning Costs	Total Cost
Pigeon's Ranch	713,950	136,250	350,200
Cañoncito	91,045	17,375	108,420
TOTAL	**804,995**	**153,625**	**958,620**

GLORIETA UNIT ALTERNATIVE 3

Location	Construction Cost	Construction Planning Costs	Total Cost
Pigeon's Ranch	999,399	190,725	1,190,124
Cañoncito	91,045	17,375	108,480
TOTAL	**1,090,444**	**208,100**	**1,298,544**

APPENDIX F: POTENTIAL EFFECTS OF ALTERNATIVES ON CULTURAL RESOURCES, PROPOSED PROTECTIVE MEASURES, AND FURTHER 106 ACTIONS NEEDED

TABLE F-1: PECOS UNIT ALTERNATIVE A

HISTORIC PROPERTY/AREA	NATIONAL REGISTER STATUS	PROPOSAL	DETERMINATION OF EFFECT	PROPOSED PROTECTIVE MEASURES	FURTHER 106 REVIEW REQUIREMENTS
Pecos Pueblo/ Mission Ruins Complex	On the National Register of Historic Places; former monument area/ruins are national historic landmark.	Relocate present administrative functions to ranch house; construct two housing units.	No adverse effect on historic, ethnographic, or archeological resources; presence of intrusive nonhistoric administrative facilities would continue to adversely impact the cultural landscape.	Continue to provide routine maintenance and upkeep for the area; site housing in previously disturbed areas out of view from ruins.	Consultation with New Mexico state historic preservation office (SHPO) and Advisory Council on Historic Preservation (ACHP) regarding housing; review of preliminary plans might be needed.

TABLE F-1: PECOS UNIT ALTERNATIVE A (CONTINUED)

HISTORIC PROPERTY/AREA	NATIONAL REGISTER STATUS	PROPOSAL	DETERMINATION OF EFFECT	PROPOSED PROTECTIVE MEASURES	FURTHER 106 REVIEW REQUIREMENTS
Kozlowski's Stage Stop	Park is listed on the national register; Kozlowski's Stage Stop is a national historic landmark. The archeological sites and surrounding landscapes and features are also treated as eligible for listing on the national register until SHPO concurrence with NPS eligibility recommendations.	(1) Continue present park administrative use and routine maintenance of stage stop and ancillary structures; use existing shop for part of maintenance function. (2) Construct new maintenance facility on previously disturbed area near stage stop, including new access road.	(1) No adverse effect; adaptive use of structures would have long-term benefits for structures. (2) Adverse effect on cultural landscape due to introduction of new modern development incompatible with cultural landscape.	(1) Continue routine maintenance on structures; adaptive use would respect original design, function, and architectural integrity of historic structures; no changes in stage stop landscape features pending completion of cultural landscape report. (2) Mitigate through sensitive design and vegetation screening; survey road and development area for archeological resources; avoid sites and/or develop mitigation plan.	(1) Consult with New Mexico SHPO and ACHP regarding adaptive use of structures. (2) Early consultation with SHPO and ACHP to help develop best site-specific treatment for area; SHPO and ACHP review of preliminary designs; SHPO review of archeological reports.
Gateway Overlook, Hispanic Frontier Site, Colonias Road and Bridge	Same as above.	No change from existing conditions.	No effect.	Routinely monitor condition of Spanish frontier site; initiate protective measures as needed.	No action.
Fogelson Ranch House Complex, Road and Bridge over Glorieta Creek, Footbridge over River, and Mill Site	Same as above.	Adaptively use facilities for administrative functions and employee housing; develop low-volume gravel access road along historic ranch roads.	No adverse effect; adaptive use of structures would have long-term benefits for structures.	Plans for adaptive use of ranch house and other facilities would respect original design, function, and architectural integrity; road alignment and upgrade would avoid significant sites; routinely monitor condition of mill site; initiate protective measures as needed.	Work with SHPO and ACHP to develop appropriate adaptive use plans and landscape designs; SHPO review of archeological reports; structural modifications for accessibility require special consideration.
Northern Boundary Area	Park is on the national register.	No action.	No effect.	None.	No action.

TABLE F-2: PECOS UNIT ALTERNATIVE B

HISTORIC PROPERTY/AREA	NATIONAL REGISTER STATUS	PROPOSAL	DETERMINATION OF EFFECT	PROPOSED PROTECTIVE MEASURES	FURTHER 106 REVIEW REQUIREMENTS
Pecos Pueblo / Mission Ruins Complex	On the National Register of Historic Places; former monument area/ruins are a national historic landmark.	Expand existing visitor center and parking; add picnic facilities; reconfigure trail to ruins and construct trail/bridge to stage stop; reroute vehicle access; add demonstration area near ruins. Remove existing administrative facilities and employee housing and revegetate area; relocate ruins preservation functions out of visitor view.	No adverse effects on historic, ethnographic, or archeological resources anticipated; positive effect on cultural landscape by removing intrusive nonhistoric facilities.	Most work would be in previously disturbed areas; removing structures, construction, and revegetation would avoid sites and would be accompanied by appropriate archeological investigations and monitoring; additions to visitor center would recognize architectural integrity and cultural landscape concerns.	Early consultation with SHPO and ACHP to help develop best site-specific treatment for area and for visitor center; SHPO and ACHP review of preliminary designs; SHPO review of archeological reports.
Kozlowski's Stage Stop	Park is listed on the national register; Kozlowski's Stage Stop is a national historic landmark. The archeological sites, and surrounding landscape(s) and features are also treated as eligible for listing on the national register until SHPO concurrence with NPS eligibility recommendations.	Adaptively use complex for staffed visitor facility, maintenance; construct access road; build staging area (parking, restrooms, picnic facilities, and orientation).	No adverse effects.	Continue routine maintenance on structures; adaptive use would respect original design, function, and architectural integrity; new roads would use historic road alignment wherever possible; no changes in stage stop landscape features pending completion of cultural landscape report.	Consultation with SHPO and ACHP regarding adaptive use of structures; structural modifications for purposes of accessibility require special consideration.
Gateway Overlook, Hispanic Frontier Site, Colonias Road and Bridge	Same as above.	Build trails to the Gateway overlook, Pecos River, and loop to ranch house/historic mill; provide restroom and picnic facilities; rehabilitate Colonias bridge.	No adverse effect; rehabilitation of Colonias bridge would have long-range benefit to structure.	Conduct archeological survey for road, trails, and development area; avoid sites and/or develop mitigation plan; locate facilities in disturbed area, out of view; routinely monitor condition of La Placita and other significant sites; initiate protective measures as needed; manage fishing; fence certain areas to protect sites.	SHPO and ACHP review of preliminary designs; SHPO review of archeological reports.

TABLE F-2: PECOS UNIT ALTERNATIVE B (CONTINUED)

HISTORIC PROPERTY/AREA	NATIONAL REGISTER STATUS	PROPOSAL	DETERMINATION OF EFFECT	PROPOSED PROTECTIVE MEASURES	FURTHER 106 REVIEW REQUIREMENTS
Fogelson Ranch House Complex, Road and Bridge over Glorieta Creek, Footbridge over River, and Mill Site	Same as above.	Adaptively use ranch house for resource education; use casita for staff housing; construct new footbridge and trail network; maintain open pastures; upgrade historic ranch road for administrative use.	No adverse effects; adaptive use of structure would have long-term benefits for structures.	Plans for adaptive use of ranch house and other facilities would respect original design, function, and architectural integrity; road alignment/upgrade and trail construction would avoid significant sites and would continue use of historic route; survey, document, evaluate mill site; routinely monitor condition and initiate protective measures as needed; fence sensitive areas.	Work with SHPO and ACHP to develop appropriate adaptive use plans and landscape designs; SHPO review of archeological reports; structural modifications for accessibility require special consideration.
Northern Boundary Area	Park is on the national register.	Construct park administrative and operations facility, employee housing, parking storage, access road, collections storage, and RV hookups.	No adverse effect; positive effect on collections in new facility.	Conduct archeological surveys, avoid sites, develop mitigation strategies; area is out of view from major park resources.	Consultation with state historic preservation officer and at beginning of development project; review of preliminary design might be needed.

TABLE F-3: PECOS UNIT ALTERNATIVE C

HISTORIC PROPERTY/AREA	NATIONAL REGISTER STATUS	PROPOSAL	DETERMINATION OF EFFECT	PROPOSED PROTECTIVE MEASURES	FURTHER 106 REVIEW REQUIREMENTS
Pecos Pueblo / Mission Ruins Complex	On the National Register of Historic Places; former monument area/ruins are a national historic landmark.	Expand existing visitor center and parking; add picnic facilities; reconfigure trail to ruins and construct new trails; remove existing facilities and revegetate area; relocate ruins preservation functions out of visitor view; *build housing.*	No adverse effect on historic, ethnographic, or archeological resources anticipated; positive effect on cultural landscape by removing intrusive non-historic facilities.	Most work would occur in previously disturbed areas; removal of structures, construction, revegetation would avoid sites and would be accompanied by appropriate archeological investigations and monitoring; *additions to visitor center* would recognize architectural integrity and cultural landscape concerns.	Early consultation with SHPO and ACHP to help develop best site-specific treatment for area and for visitor center; SHPO and ACHP review of preliminary designs; SHPO review of archeological reports.
Kozlowski's Stage Stop	Park is listed on the national register; Kozlowski's Stage Stop is a national historic landmark. The archeological sites, and surrounding landscapes and features are also treated as eligible for listing on the national register until SHPO concurrence with NPS eligibility recommendations.	(1) Rehabilitate and adaptively use complex; construct new entrance *road, parking, orientation,* restrooms, picnic facilities, and trails. (2) Construct maintenance facility on previously disturbed area near stage stop, including an access road.	(1,2) No adverse effect.	(1) Continued routine maintenance of structures; adaptive use would respect *original design, function, and* architectural integrity; new roads would use historic road alignment wherever possible; no changes in stage stop landscape features pending completion of cultural landscape report. (2) Mitigate through sensitive design and vegetation screening; survey road and development area for archeological resources; avoid sensitive resources and/or develop mitigation plan.	(1) Consultation with SHPO and ACHP regarding adaptive use of structures. (2) Early consultation with SHPO and ACHP to help develop best site-specific treatment for area; SHPO and ACHP review of preliminary designs; SHPO review of archeological reports.

TABLE 4.5: PECOS UNIT ALTERNATIVE C (CONTINUED)

HISTORIC PROPERTY/AREA	NATIONAL REGISTER STATUS	PROPOSAL	DETERMINATION OF EFFECT	PROPOSED PROTECTIVE MEASURES	FURTHER 106 REVIEW REQUIREMENTS
Gateway Overlook, Hispanic Frontier Site, Colonias Road and Bridge	Same as above.	Build trail network and gravel road to the Gateway overlook; develop visitor facilities (exhibits, parking, restrooms) at former quarry area; build trails and rehabilitate Colonias bridge and road for pedestrian use; stabilize frontier site; maintain historic pastures.	No adverse effect on archeological resources with mitigation; rehabilitation of Colonias bridge would have long-range benefit to structure.	Survey road, trails, and development area for archeological resources; avoid sites and/or develop mitigation plan; locate facilities in disturbed area, out of view; routinely monitor condition of Spanish frontier site; initiate protective measures as needed; manage fishing and fence some areas to protect sites; reuse historic roads and traces; design road and facilities so they do not intrude on landscape.	Same as above.
Fogelson Ranch House Complex, Road and Bridge over Glorieta Creek, Footbridge over River and Mill Site	Same as above.	Expand and adaptively use ranch house and complex for administration and park housing; construct new gravel road and bridge; replace footbridge, develop trail to mill; maintain pastures and associated landscape features.	Adaptive use of ranch complex would have long-term benefits but expansion of the ranch house would be an adverse effect; construction of the new road and bridge would adversely impact the cultural landscape.	Plans for addition to and adaptive use of ranch house and other facilities would respect original design, function, and architectural integrity wherever possible; design would also be sensitive to the cultural landscape; new roads would use existing historic roads wherever possible, and would avoid significant sites; survey, document, and evaluate mill site and routinely monitor condition and initiate protective measures as needed; fence sensitive areas.	Work with state historic preservation officer and advisory council to develop appropriate adaptive use plans, designs for addition, and landscape designs; SHPO review of archeological reports; structural modifications for accessibility require special consideration.
Northern Boundary Area	Park is on the national register.	Construct new resource education facility, access road, and parking.	No adverse effect.	Conduct archeological surveys, avoid sites, and develop mitigation strategies; area is out of view from park's major resources.	Consultation with preservation officer and advisory council at beginning of development project; review of preliminary design might be needed.

TABLE F: PECOS UNIT ALTERNATIVES

HISTORIC PROPERTY/AREA	NATIONAL REGISTER STATUS	PROPOSAL	DETERMINATION OF EFFECT	PROPOSED PROTECTIVE MEASURES	FURTHER 106 REVIEW REQUIREMENTS
Pecos Pueblo / Mission Ruins Complex	On the National Register of Historic Places; former monument/ruins are a national historic landmark.	Expand visitor center and parking; remove existing administrative facilities and revegetate area; add picnic facilities; reconfigure trail to ruins and construct new trails; relocate ruins preservation functions out of visitor view; build housing in previously disturbed area.	No adverse effect on historic, ethnographic, or archeological resources anticipated; positive effect on cultural landscape by removing intrusive structures.	Most work would be in previously disturbed areas; removal of structures, construction, and revegetation would avoid sites and would be accompanied by appropriate archeological investigations and monitoring; parking enlargement and housing designs would recognize cultural landscape concerns.	Consultation with SHPO and ACHP to help develop best site-specific treatment for area; SHPO and ACHP review of preliminary designs; SHPO review of archeological reports.
Kozlowski's Stage Stop	Park is listed on the national register; both ranch complexes, archeological sites, and surrounding landscapes are also treated as eligible for listing on the national register until SHPO concurrence with NPS eligibility recommendations.	(1) Adaptive use of complex for visitor contact; construct new entrance road, parking, orientation, restrooms, picnic area, and trails. (2) Construct access road and administrative and operations facilities on previously disturbed area near stage stop.	(1) No adverse effect. (2) Adverse effect on cultural landscape due to introduction of modern development incompatible with cultural landscape.	(1) Document and evaluate complex prior to rehabilitation and adaptive use; adaptive use would respect original design, function, and architectural integrity; new roads would use historic road alignment wherever possible; survey road and development area for archeological resources; avoid sites and/or develop mitigation plan; no changes in stage stop landscape features pending completion of cultural landscape report. (2) Mitigate through sensitive design and vegetation screening.	Early consultation with SHPO and ACHP to help develop best site-specific treatment for area; SHPO and ACHP review of preliminary designs; SHPO review of archeological reports.

TABLE 24: PROPOSED ACTIONS AND ALTERNATIVE D (CONTINUED)

HISTORIC PROPERTY/AREA	NATIONAL REGISTER STATUS	PROPOSAL	DETERMINATION OF EFFECT	PROPOSED PROTECTIVE MEASURES	FURTHER 106 REVIEW REQUIREMENTS
Gateway Overlook, Hispanic Frontier Site, Colonias Road and Bridge	Same as above.	Develop new park entrance road, visitor center, parking, trail network, overlook, and picnic area at quarry; rehabilitate Colonias bridge and road.	Potential for adverse effect on archeological and ethnographic resources from concentrated visitor use in the Gateway overlook area; large new development and a paved road and its associated traffic would have an adverse impact on the cultural landscape; rehabilitation of the Colonias bridge would have long-range benefit to structure; other impacts same as alternative B.	Survey road, trails, and development area for archeological resources; avoid sites and/or develop mitigation plan; locate facilities in disturbed area, out of view; initiate archeological investigations, collect diagnostics, stabilize, and routinely monitor condition of Spanish frontier site and adjacent prehistoric sites; initiate protective measures as needed; manage fishing and fence some areas to protect sites; reuse historic roads and traces; design road and facilities to minimize intrusion on landscape.	Same as above plus develop mitigation and preservation plan for frontier site in consultation with SHPO and ACHP.
Fogelson Ranch House Complex, Road and Bridge over Glorieta Creek, Footbridge over River, and Mill Site	Same as above.	Adaptively use ranch house and complex for interpretation and resource education; develop parking, bridge, and roads; construct new gravel road and bridge; replace footbridge and develop trails; maintain historic pastures.	Adaptive use of ranch complex would have long-term benefits; construction of the new road and bridge would adversely impact the cultural landscape.	Adaptive use of ranch complex would respect original design, function, and architectural integrity; design would also be sensitive to the cultural landscape; new road would use existing roads wherever possible and would avoid significant sites; survey, document, and evaluate mill site; routinely monitor condition and initiate protective measures as needed; fence sensitive areas.	Work with SHPO and ACHP to develop appropriate adaptive use plans and landscape designs; SHPO review of archeological reports; structural modifications for accessibility require special consideration.
Northern Boundary Area	Park is on the national register.	No action.	No effect.	None.	No action.

TABLE F-5: GLORIETA UNIT ALTERNATIVE 1 (NO ACTION)

HISTORIC PROPERTY/AREA	NATIONAL REGISTER STATUS	PROPOSAL	DETERMINATION OF EFFECT	PROPOSED PROTECTIVE MEASURES	FURTHER 106 REVIEW REQUIREMENTS
Cañoncito	Park is on the national register.	No change in present use.	No effect.	None.	No action.
Pigeon's Ranch	Park is on the national register; Pigeon's Ranch is a national historic landmark.	No change in present use.	Adverse effect on structure, archeological resources, and landscape from unstructured visitor use, natural deterioration, and incompatible use of nearby areas.	Provide routine maintenance of structure; install signs to prevent parking on archeological ruins; continue archeological investigations as funding allows; work with private landowners to protect resources.	Consult with SHPO on ways to develop appropriate stabilization methods and protection for resources on nearby private lands.

HISTORIC PROPERTY/AREA	NATIONAL REGISTER STATUS	PROPOSAL	DETERMINATION OF EFFECT	PROPOSED PROTECTIVE MEASURES	FURTHER 106 REVIEW REQUIREMENTS
Cañoncito	Park is on the national register.	Develop interpretive pullout on access road.	No adverse effect.	Conduct archeological surveys, avoid sites, develop mitigation strategies; ensure that developments are compatible with cultural landscape.	Same as above.
Pigeon's Ranch	Park is on the national register; Pigeon's Ranch is a national historic landmark.	If new freeway access is provided and NM 50 is relocated, remove intrusive structures and features; stabilize ranch structure, historic features, and landscape; develop visitor facilities outside historic core area; rehabilitate existing road for foot travel; and build loop trail; maintain cleared areas; develop pullout and trail at Windmill Hill. If NM 50 is not relocated, construct interpretive exhibit and trail and stabilize building.	No adverse effects from construction; positive benefits from removing highway and stabilizing adobe structure.	Conduct archeological and architectural surveys and evaluation, avoid sites, and develop mitigation strategies; ensure that developments are compatible with cultural landscape; work with private landowners to protect resources.	Work with SHPO and ACHP to develop appropriate strategies for preservation of adobe structure, restoration of landscape, research, and protection of resources on nearby private lands.

HISTORIC PROPERTY/AREA	NATIONAL REGISTER STATUS	PROPOSAL	DETERMINATION OF EFFECT	PROPOSED PROTECTIVE MEASURES	FURTHER 106 REVIEW REQUIREMENTS
Cañoncito	Park is on the national register.	Same as alternative 2.	Same as alternative 2.	Same as alternative 2.	Same as alternative 2.
Pigeon's Ranch	Park is on the national register; Pigeon's Ranch is a national historic landmark.	If new freeway access is provided and NM 50 is moved, rehabilitate road for trail use; stabilize ranch structure, historic features, and landscape; construct new visitor facilities in nonsensitive area; build new trails. If NM 50 is not relocated: construct interpretive exhibit and trail to Sharpshooter's Ridge.	No adverse effect from construction; positive benefits from removing highway and stabilizing adobe structure.	Conduct archeological and architectural investigations and evaluation, avoid sites, and develop mitigation strategies; ensure that developments are compatible with cultural landscape; work with private landowners to protect resources.	Work with SHPO and ACHP to develop appropriate strategies for preservation of adobe structure, restoration of landscape, research, and protection of resources on nearby private lands.

APPENDIX G: WILDERNESS SUITABILITY ANALYSIS

The Park Service, as a matter of policy, evaluates all lands and waters under its jurisdiction for wilderness suitability, in accordance with the Wilderness Act (PL 88-577, USC 1131-36) and departmental and NPS guidelines for wilderness preservation and management. These policies and guidelines delineate existing and future conditions and uses that are compatible with wilderness designation. The following factors would be particularly relevant in determining the wilderness suitability of lands in Pecos National Historical Park.

Existing developments — areas where evidence of people and their developments are obvious and are expected to remain are not suitable for wilderness designation. NPS development zones are not compatible with wilderness designation. Lands containing aboveground utility lines and maintained roads also can not be recommended for wilderness designation.

Size of unit — the Wilderness Act requires that a wilderness area be 5,000 acres or larger to make practicable its preservation and use in an unimpaired condition.

Motorized use — areas where motorized vehicles are routinely used for recreational or maintenance purposes are not suitable for wilderness designation unless those uses are eliminated.

Based on the extent of current development, presence of roads, and amount of past disturbance, the Pecos unit west of the Pecos River would not be suitable for wilderness designation. Most of this area shows signs of existing or past human use. Approximately 109 acres of the unit have developments or structures, including the Pecos Pueblo / mission ruins complex, visitor center and parking lot complex, employee housing, administrative and maintenance facilities, Kozlowski's Stage Stop and corral/pasture, the Forked Lightning ranch house and attendant structures, wells, and storage facilities. Another 24 acres have been heavily disturbed in the past by human activities, which resulted in landscape scars. Other signs of past human use including fences, bridge ruins, and pastures, are also evident. The extent

of present development and the amount of disturbed areas indicate that this area would not be suitable for wilderness designation.

Much of the Pecos unit west of the Pecos River also is fragmented by roads. NM 63 bisects the unit and I-25 forms the unit's western boundary. The area is further divided by two powerline rights-of-way and old dirt/gravel ranch roads that are maintained on an irregular basis. Some of these administrative roads are used for maintaining ranch structures, patrolling the park, emergency response, and maintaining the park's perimeter fence. They are important for managing park resources — eliminating all of the roads would make it difficult for the Park Service to achieve its management objectives. Finally, noise from nearby I-25 can also be heard throughout much of the park.

The area east of the Pecos River shows relatively few signs of past human activities. However, this area is too small (approximately 2,700 acres) to practicably manage as a wilderness area. The Forest Service lands near the park also are not managed in a way that would be appropriate for a wilderness area — these lands are used for public firewood collection and traditionally have been accessed by motorized vehicles.

None of the Glorieta unit is suitable for wilderness. Both the Pigeon's Ranch and Cañoncito areas are too small (345 acres and 337 acres, respectively) to be managed as wilderness. The Pigeon's Ranch subunit also has residences and commercial structures within its boundary and is crossed by NM 50, while I-25 forms the Cañoncito subunit's northern boundary.

Based on these factors, there are no areas in Pecos National Historical Park suitable for wilderness designation.

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SUMMARY
PECOS UNIT ALTERNATIVES

	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C	ALTERNATIVE D
DESCRIPTION	Alternative A, the no-action alternative, describes the conditions of the park that would exist with no changes in the current management direction or without an approved general management plan. The purpose of this alternative is to provide a basis for evaluating changes and impacts that would occur under the three action alternatives. Under this alternative some provisions would be made for accommodating immediate administrative needs, for example, relocating existing administrative facilities out of the Pecos Pueblo / mission ruins complex. This alternative would not provide any new visitor facilities. The existing Fogelson visitor center near the Pecos Pueblo / mission ruins complex would continue as the only interpretive and orientation facility for visitors in the park. The ranch house would become the administrative office, and Kozlowski's stage stop would continue to serve as park offices and employee housing. A new maintenance facility would be built in a previously disturbed area southeast of the stage stop.	Alternative B, the proposed action, would give visitors opportunities to learn about the continuum of use in the Pecos area from prehistoric times through the 20th century. New visitor facilities would emphasize trail development and would direct visitors to interpretive opportunities at trailheads and overlooks. Two primary staging areas would be provided for visitors — the existing Fogelson visitor center and Kozlowski's Stage Stop. Both staging areas would have parking, orientation, trailheads, and other support facilities. The Fogelson visitor center would be expanded to provide more office space, and parking capacity would be increased. Kozlowski's Stage Stop would be adapted to provide a staffed visitor interpretive facility. A network of trails would be developed from these staging areas to other points of interest. A new park administrative and operations facility would be developed near the village of Pecos by the northern park boundary. This facility would include offices, curatorial space, a maintenance facility, and employee housing, and it would provide parking and storage areas. The existing facilities near the Pecos Pueblo / mission ruins complex would be removed. The ranch house would be adapted for use as a resource education facility for school and other groups, including the possibility for overnight use for special programs. Primitive trails would be provided in the rugged terrain east of the Pecos River.	Alternative C would also focus on interpreting the historical continuum from prehistoric periods to the 20th century. However, under this alternative three easily accessible visitor staging areas would be used instead of two. Each staging area would focus on a specific aspect of the continuum, while also providing a brief overview. The Fogelson visitor center would serve as one staging area and would continue to function as a primary interpretive facility with a reduced emphasis on providing an overview. This facility would be expanded to provide more office space, and additional parking would be provided. Kozlowski's Stage Stop would serve as another staging area and would provide a second staffed visitor contact facility. The gateway overlook would serve as a third staging area and would have a comfort station and trailhead. Each staging area would have vehicle access, parking, orientation, trailheads, and support facilities. This alternative would allow more vehicle access in the park. The ranch house would be adapted to accommodate administrative offices. A new maintenance facility would be developed between the ranch house and Kozlowski's. The existing facilities near the Pecos Pueblo / mission ruins complex would be removed. Primitive trails would be provided in the rugged terrain east of the Pecos River. A new resource education facility would be developed near the northern boundary for school and other groups, as well as community functions.	The focus of alternative D would be to interpret the gateway and the historic travel patterns through Glorieta Pass. Visitors would be directed to a new entrance at the south end and a new visitor center at the Gateway overlook area. A broad interpretive overview would be provided at the new Gateway visitor center, as well as parking, orientation, and trails. Specific and more focused interpretation would be provided at Kozlowski's and at the Fogelson visitor center near the Pecos Pueblo / mission ruins complex. Kozlowski's would be adaptively used as an unstaffed interpretive facility. The Fogelson visitor center would be expanded for office space, and the parking capacity would be increased. A new park administrative and operations facility would be developed between Kozlowski's and the ranch house. This facility would have offices, a curatorial facility, a maintenance facility, and employee housing, as well as parking and storage areas. The existing facilities near the Pecos Pueblo / mission ruins complex would be removed. The ranch house would be adapted for use as a resource education facility for schools and other groups, including the possibility for overnight use for special programs. Primitive trails would be provided in the rugged terrain east of the Pecos River.
IMPACTS	*Under alternative A archeological and architectural* resources would not be directly impacted by construction activities. Existing administrative facilities would continue to adversely affect the cultural landscape at the Pecos Pueblo/ mission ruins complex. No significant adverse impacts would occur on natural resources. Scenic resources in the park could be adversely affected by development outside the park. *No significant adverse impacts would occur on* local residents or the local economy as a result of this alternative. Local residents would be denied permission to fish in the Pecos River within park boundaries. The visitor experience would be adversely affected because only a small portion of the park would be open to visitation.	*Under alternative B no adverse effects on the ruins,* archeological resources, or ranch facilities would be anticipated. Adaptive uses of historic structures would have a beneficial effect. The proposed actions and development for the Pecos Pueblo / mission ruins complex would be beneficial to historic properties and the cultural landscape. No significant adverse impacts would occur on natural resources. Over time the park would be restored to more natural conditions, which would have a beneficial effect on the ecosystem. Most of the park's existing visual quality would be preserved. Visual quality at the Pecos Pueblo / mission ruins complex would be improved by removing the existing administrative facility. Future development outside the park might have significant adverse impacts on park scenic resources, depending on the amount and type of development. Minor economic benefits would accrue to the village of Pecos and other nearby communities during construction activities in the park. The community and local school groups would experience positive effects from environmental education opportunities provided by the park. This alternative would have beneficial effects on visitors.	*Impacts on cultural resources would be similar to those* under alternative B; however, more potential exists for direct and indirect adverse impacts due to construction and visitor use. Constructing new maintenance facilities near Kozlowski's and roads to the Gateway overlook area would adversely affect the cultural landscape. Adaptive uses of historic structures would have a beneficial effect. An addition to the ranch house would adversely affect both the cultural landscape and the historic architecture of the ranch. Increasing vehicle access throughout the park and accommodating greater numbers of visitors would likely result in more adverse impacts on natural resources than under alternative B. Constructing a maintenance facility near Kozlowski's would increase the chance for adverse impacts on the water quality and riparian habitat of Glorieta Creek. Minor economic benefits would occur in the village of Pecos and other nearby communities during the construction of new park facilities. This alternative would have beneficial effects on visitors.	*Impacts on cultural resources would be similar to those* under alternative C. The cultural landscape would be adversely impacted by new roads, parking, and administrative and maintenance facilities. Adaptive uses of historic structures would have a beneficial effect. Constructing a new visitor center at the Gateway overlook would increase the potential for indirect negative impacts on nearby archeological resources. *No significant adverse* impacts would occur on natural resources. Constructing a maintenance and administrative facility between the ranch house and Kozlowski's would increase the chance for adverse impacts on the water quality and riparian habitat of Glorieta Creek. New facilities would adversely affect scenic resources in the park. The quality of the scenery outside the park might be adversely affected by future development, depending on the type and amount of development. Minor economic benefits would occur in the village of Pecos and other nearby communities during the construction of park facilities. A resource education facility would have a beneficial effect on the local community. This alternative would have a beneficial effect on visitors.

SUMMARY
GLORIETA UNIT ALTERNATIVES

	ALTERNATIVE 1	ALTERNATIVE 2	ALTERNATIVE 3
DESCRIPTION	Alternative 1, the no-action alternative, would provide no new facilities in the Glorieta unit. Visitor use in the area would not be encouraged. NM 50 would remain in its present location.	Under alternative 2 (the proposed action) the battlefield would be preserved and interpreted. The Pigeon's ranch structure would be stabilized. A staffed visitor contact facility in an existing structure, interpretive exhibits, and trails near Pigeon's Ranch would be developed. An exterior interpretive exhibit and pulloff parking would be provided at Cañoncito. NM 50 would be relocated outside the park boundary.	The Glorieta unit would have a visitor contact facility in a new structure. Other developments, such as interpretive exhibits and trails near Pigeon's Ranch and an interpretive exhibit at Cañoncito, would be the same as alternative 2.
IMPACTS	Under alternative 1 adverse impacts would continue on cultural resources from inappropriate or unstructured public use. At Pigeon's Ranch, traffic and visitor activities would continue to adversely affect the historic structure and archeological resources. Lack of visitor facilities and educational opportunities would result in significant parts of the park not being interpreted for visitors. There would be no effects on vegetation, wildlife, threatened or endangered species, floodplains, wetlands, water resources, or prime and unique farmlands because no new development would occur in these areas. The socioeconomic environment would remain unchanged.	Structured visitor use would have a beneficial effect on cultural resources of this unit. New facilities would have no significant effects on vegetation, wildlife, or scenic resources because the areas of development have been previously disturbed. No effects would occur on floodplains, wetlands, riparian habitat, threatened or endangered species, or prime and unique farmlands because development would not occur in these areas. Impacts on the socioeconomic environment would be positive because visitors would stay longer and gain a greater understanding of history from educational and visitor experience opportunities. Under alternative 2 removal of NM 50 would have a beneficial effect on cultural and natural resources.	New facilities would not adversely impact vegetation and wildlife in this area because it has been previously disturbed. As in alternative 2, no effects would occur on floodplains, wetlands, riparian habitat, threatened or endangered species, or prime and unique farmlands because development would not occur in these areas. Impacts on the socioeconomic environment would be positive because visitors would stay longer and gain a greater understanding of history from educational and visitor experience opportunities. Under alternative 3 removal of NM 50 and structured visitor use would have the same beneficial effects on cultural and natural resources.

As the nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering sound use of our land and water resources; protecting our fish, wildlife, and biological diversity; preserving the environmental and cultural values of our national parks and historical places; and providing for the enjoyment of life through outdoor recreation. The department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people by encouraging stewardship and citizen participation in their care. The department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.

NPS D-37 August 1995

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